

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Title on header taken from: /
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments: /
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

THE CANADA

EDUCATIONAL MONTHLY

AND SCHOOL MAGAZINE.

FEBRUARY, 1892.

THE TEACHING OF GEOGRAPHY, WITH SPECIAL REFERENCE
TO THE BRITISH EMPIRE.

BEFORE discussing the subject of the evening, it may be as well to try to remove from your minds two preconceptions—or prejudices—which may have effected a lodgment there, and which would interfere with a true insight into the problem before us.

The first of these preconceptions probably is, that I am about to recommend to the notice, and for the adoption, of teachers, a new subject. My proposition is the very reverse of this: it is rather to diminish the already too great number of subjects taught in our schools, and to describe a method which may make those already taught in them easier to teach and still easier to learn. One of the chief banes of education at the present day is the inordinate number of subjects which weaken the power of the teacher, and distract—instead of concentrating—the attention of the pupil. If any man, with the encyclopædic greed which is the characteristic of so many educational faddists, were to press upon us the adoption of a new

additional subject in our schools, I should be inclined to invoke upon his unreflecting head the well-known curse of St. Ernulphus: "Maledicat illum patriarcharum et prophetarum laudabilis numerus . . . Maledicant illum cœli et terra, et omnia sancta in eis manentia . . . Maledictus sit ubicunque fuerit, sive in domo, sive in agro, sive in viâ, etc. . . . Maledictus sit vivendo, manducando, bibendo, esuriendo," etc., etc., etc. But I will spare you the rest of the too theological execration, which occupies twenty-seven pages in my edition of "Tristram Shandy"; and I will sum it all up in the older Oriental formula: "May his face be turned upside down; and may jackasses sit upon his uncle's grave!"

The second prejudice which I ask you to remove from your minds, is the idea that Geography is a fixed subject, with a known and agreed-on content, with defined limits, with a well understood goal, and with a clearly marked road up to that goal.

Whatever Geography may be, it is nothing of all this. Geography probably means fifty different things to fifty different people; and many of their meanings hardly cover any common ground at all. Any tenable definition of Geography would remind me of the mediæval scholastic definition of God: "God is a circle whose centre is everywhere, and whose circumference is nowhere." Geography, indeed, is something like London itself—a world the content and intent of which no living man knows or can know. There are at present seventeen distinct official Londons; and there are as many different real Londons as there are people present here to-night in this audience. But, for all practical purposes, I take Geography to mean: Connected information regarding the conditions of Man's life on this planet.

Geography, however, has hardly been treated in this light; and it remains for the new spirit in education—a spirit of power, of breadth, of common sense—to remould our conceptions of Geography, and to introduce the new conceptions into our school-rooms. Hitherto, ninety per cent. of the Geography taught in our schools has been a mere matter of names—the affixing of names to black dots upon maps; and this fundamental heresy still infests our schools and our school-books.

There are two passages in the early history of cookery—a delightful history which still remains to be written—which shed a significant light upon much of our procedure in the teaching of Geography. A belated person had, a very long time ago, taken to growing the potato-plant; but he seems to have been ignorant as to what part of the plant was fit for the food of man. It never struck him that the roots were to be eaten; and he prepared for himself and family a dish of the fruits—of what are known

to children as "potato-bullets," and these are just as pleasant to eat and as hard of digestion as leaden bullets themselves.

The second error in cookery was even worse. At the time when the use of tea was making itself slowly known in the country parts of this island, a gentleman procured, at great expense, half-a-pound of tea, and invited his friends to share with him in the unwonted luxury. He carefully boiled the tea, poured off the water, and served up the leaves after the manner of a pudding. To give additional flavour to the dish, he added a butter-sauce. Neither the host nor the guests could discover what it was that had made tea so highly prized by the upper classes—and so much sought after; nor was any of the company known to repeat the unhappy experiment.

Now, just as the leaves of the tea-plant were offered to the guests of their benighted host, so many writers on Geography insist on making the very staple of their books long lists of names. These are essential, they say; it is the essentials we offer in our books; and no Geography can be learned without them. One book-maker, whose Geography was published only last year, goes so far as to say in his preface: "Geography is to a large extent a matter of names; if these be omitted, the Geography is omitted, and the work is incomplete." Most true, O geographical Solon! Travelling is to a large extent a matter of money; if this be omitted, the travelling is omitted, and the traveller must stay at home. And this unhappy crammer—fallen on evil days—asks his pupil to get up the names of fifty-two towns in Russia, about most of which nothing whatever is said except that the towns *are there*, and you can find them in the map if you care to look. Here is a specimen:—

Mohiley—capital of the Government of Mohiley.

Kovno—capital of the Government of Kovno.

Stavropol—capital of the Government of Stavropol.

Kostroma—capital of the Government of Kostroma.

This is all the information given, except that the populations are added. I submit that this is no information at all; that it is utterly and entirely useless; that it is obstruction to the digestion of the intellect; and that the pupil would be better without it.

But, in the matter of smothering the learner's mental powers under masses of names, there are worse sinners than the writer I have just quoted from. In a Junior Geography, which I suppose is intended for learners of from twelve to fifteen years of age, the author insists that, in Spain alone, junior classes shall get up the names and positions of eighty-two towns and sixty-seven rivers. These rivers embrace such names as the *Miero*, the *Vouga*, the *Xamara*, and so on. But who wants to know about the *Miero* and the *Vouga*? No one. We not only do not want to know anything about them; we go further, we do want *not* to know anything about them. In France, the junior pupil has to learn one hundred and twenty-nine towns and ninety-five rivers. The list of towns contains such names as *Mont de-Mazan*, *Laval*, *Sable*, *Gannat*, *Apt*, etc., etc., which I suppose occupy the same position in France that little Pedlington and Much Wycombe do in England. In Austria the same writer will not let his junior friend off a river in which he can catch a trout; and the unhappy child has to get up the *Katsbach*, the *Bode*, the *Whipper*, the *Seberkörös*, the *Ahi*, the *Itz*, the *Aa*, and several score more.

This is a fair specimen of the Junior Geography. But in his Senior Geography, which is intended for the ages of fifteen to eighteen, and for that much suffering class called in the Education Reports "Pupil-Teachers," the author fairly revels in his power of emptying the contents of overcrowded maps into the pages of his book. The index to this book contains nearly 12,000 names. Let us suppose that a boy has two lessons a week in Geography, and that he gets up and retains thirty names every week. This would give 1,200 names of places got up every year; and we should also have to make the extreme supposition that these names were retained by the learner. At this rate, he would take ten years to get through the book: he would begin it at the age of fifteen, he would be five and twenty before he had mastered it. And what would he have mastered? He would have mastered, in Russia alone, the names of 346 towns and of 186 rivers. He would know where *Potshirki* and *Bobrov* and *Perejaslav* and *Slonim* and *Slutsk* and *Mglin* and *Restavl* are and what their populations are. But about the inner existence or the causes of the existence of *Potshirki*, *Bobrov*, *Slonim* and the rest he would know nothing at all. I suppose that, if an educated Englishman knows the position and trade of some half dozen towns and cities in Russia, he knows enough to enable him to examine into the social and political life of that wonderful country. In England, the Senior Geography gives the names and positions of 719 towns to be got up. Among these are *Brampton*, *Dalton*, *Neston*, *Bruton*, *Minchin-Hampton*, *Padstow*, and hundreds more of similar small country towns, with a church, a churchyard, an inn and a semi-occasional visitor.

One shudders at this kind of slave-labour. One asks why the writer was

ever allowed to make such a book, or where the schoolmaster was educated who even dreamed of putting such a book into the hands of his pupils. No human mortal could get up this book; you would have to put a committee on it. This committee should consist of a member of the Statistical Society, the Editor of the Statesman's Year Book, a Blue-Book compiler, and one or two Globe-trotters. Lock up this committee in a quiet country-house for five years, give them regular exercise, intercept all letters and telegrams, let their meals be always punctual and their rooms well aired—and they might be able—jointly, but not severally—to stand an examination on this Senior Geography. It is possible that a person might have, in addition to the few friends that hold on to one through life, acquaintances besides to the number of twelve thousand. But what a nuisance it would be if these twelve thousand acquaintances were to take to calling on one, to ringing the bell, to leaving their cards, and to taking care that nothing more was known of them but their names. But this is almost exactly the geographical conduct of the writer I am speaking about. He serves up the tea leaves in immense quantities: for the educative or inspiring part of geography, he cares little or nothing.

But it may be said that there is a great deal of interesting information in this Geography. So there is. But there is also a great deal of gritty gossip, like the following:—

Epinal is noted for making lace.

Furness for an active trade in cattle.

Fleensburg for an active general trade.

Modon (in Greece) for a few remains of antiquity.

Lynn (in the U. S.) for sea-bathing and shoes.

Burg for woollens, glue and snuff. Now I submit this is not mental food

at all; that it is the mere gatherings of the geographical chiffonier; that it bears no resemblance to science or to connected thought, but looks rather like a distant cousin of the "Groves of Blarney." You remember the well-known lines:—

'Tis there the kitchen hangs many a fitch in,
With the maids a-stitchin' upon the stair;
The bread and biske', the beer and whisky,
Would make you frisky if you were there.
'Tis there you'd see Peg Murphy's daughter
A-washing praties forment the door,
With Roger Cleary and Father Healy,
All blood-relations to my Lord Donoughmore.

This is just as connected and just as educative as the Geography we have been looking at; it has the advantage of being vastly more agreeable.

I will draw to a close this criticism on the teaching of mere names by reading you an Eastern story, which almost seems to anticipate our dry-as-dust procedure in the matter of Geography:—

"An Eastern monarch made a proclamation that, if any man would tell him a story that should last for ever, he would make him his heir, and give him the princess, his daughter, in marriage; but if any one should pretend that he had such a story, and should fail—that is, if the story should come to an end—he was to have his head chopped off. For such a prize as a beautiful princess and a kingdom, many candidates appeared, and dreadfully long stories some of them told. Some lasted a week, some a month, some six months. Poor fellows! they all spun them out as long as they possibly could; you may be sure; but all in vain; sooner or later they all came to an end, and one after another the unlucky story-tellers came to an end also.

"At last came a man who said that he had a story which would last for ever, if his majesty would be pleased to give him a trial. He was

declared heir to the throne, and nobody ever expressed a wish to hear the rest of his story, for he said it was impossible to come to the other part of it till he had done with the locusts."

To-day there are many signs of something better in the teaching of Geography. There are the lectureships in Oxford and Cambridge; but the poverty and feebleness of this movement may well be contrasted with the wealth and seriousness of Germany, which has fifteen chairs of Geography alone, the professors holding which are in every respect equal to their colleagues, and capable of filling the office of Rector of their University. Then there are the prizes offered by the two Royal Geographical Societies of London and Edinburgh; and last, not least, there are the better books and the more clearly printed atlases which are now finding their way into our schools. The new writers of Geographies do not disdain the humanum that Terence insists upon; and even poetical quotations find their way into the new books. There is also here and there a praiseworthy attempt at giving a certain unity of impression regarding a country—at summing up in one paragraph the most striking characteristics of the region described.

Let us now come to the discussion of the subject of the evening. I have to plead guilty to having written a Geography of the British Empire; but I will try to atone for my fault by suggesting a method which may make the collection of knowledge regarding that immense region a pleasure rather than a grind, an attractive pursuit instead of a burden and a task.

I.—First of all, I should say that this book, if used at all, should not be given out in lessons; should not be "learned"; should not be "got up." I can suppose a set of young students

reading portions of the book aloud with a large map of the world in front of them; discussing each with the teacher (who is for the time being a mere chairman or chairwoman) or with each other; comparing this number with that number, this distance with that distance; and referring each datum to some standard or table of standards which they have made for themselves and fastened upon the wall of the schoolroom. The size of each considerable town in the colonies compared with some town in England, adopted as a standard of measurement; the distances by sea compared with the run across to New York or the shorter run between Hull and Copenhagen; the distances by rail and the time taken as compared (or contrasted) with the eight hours' run of 400 miles on the Great Northern between London and Edinburgh; the differing productions of each colony—these and many other things would form easy subjects for discussion during the hour. After reading a chapter, each member of the class might write a short summary of the chapter—not from memory, but with the book before them. This exercise would give a training in an art of great value for the cultivation of the judgment—the art of estimating the relative value and importance of each fact and statement. To the untrained mind, one fact is as important as another; and his mental picture is as devoid of perspective as the painted picture of a Chinese. It is, indeed, remarkable how, even in the case of practised writers, facts and incidents of small importance occupy as much space and are printed in as large type as events which are almost revolutionary in their results. This defect is seen at its worst in the case of writers of school histories. I looked into one of these histories a few days ago; and I found twenty-two distinct events—all of the most various value—recorded

in twenty lines. But I may return to this question on some future occasion.

II.—I will suppose this, or any other book, read through in this not unpleasant fashion—a map accompanying the reading, and summaries closing up its results. Can anything else be done with the subject or with the book? I think there can. One great end in teaching is, if possible, to look upon the book as merely so much raw material, and to get out of it as much intellectual play and exercise as the teacher and pupil are able to find. We might have exercises such as the following—and these exercises could be applied to any Geography, as well as to this. Let us give out, as the subject for enquiry, a town or city, such as Bombay, Melbourne or Quebec. The exercise might be worked out on the following lines:—

Bombay :

1. Distance from the Equator (Latitude) in degrees ; distance in miles. Distance from the N. Pole in miles.
2. Altitude (height above the sea-level).
3. Foundations of its life : (a) Industries ; (b) Commerce.
4. Angle of Sun's Rays. Temperature : (a) Maximum in summer ; (b) Minimum in winter ; (c) Range.
5. Sea (or ocean) to windward.
6. Prevailing Winds : (a) Trades ; (b) Monsoons ; (c) Storms.
7. Supply of rain : (a) Quantity

during the year ; (b) How distributed ; (c) Rainy seasons.

8. Soil of country round : (a) Crops ; (b) Mines.

9. Population of Town : (a) As compared with other towns in the same country ; (b) As compared with other towns of a similar character in other countries.

10. Communications : (a) Land : Rail, Highway, Canal. (b) Sea : Steam-lines, Sailing-ships.

This form—or something like this—might be printed on a large black-board. But I would not have it given out as a lesson. I would regard it simply as giving a line for research and for discussion ; and I would invite contributions from the class. One pupil might hunt up one part of the subject ; another, another. They would look not only through the book they were using ; they would hunt up the facts, in cyclopædias, in gazetteers, in year-books, in books of travels and in magazines. The purely intellectual rivalry and friction would create in the class a social glow, which would end by attaching, entangling and interesting even the dullest. The type of ninety per cent. of our school-work is grind and cram—the forceful appropriation (learning “by heart”) and fearful reproduction of other people's work ; the plan I am recommending would introduce into our schools the method and habit of research, which enlists the hunting passion—the strongest passion that lives in the constitution of man.—*Educational Times.*

(To be continued.)

A GOOD deed is never lost ; he who sows courtesy, reaps friendship ; and he who plants kindness, gathers love.—*Basil.*

I MEAN never to forget that I have a country, to which I am bound by a thousand ties ; and the stone which is to lie on the ground that shall cover me, shall not bear the name of a son ungrateful to his native land.—*Daniel Webster.*

VOCATION VERSUS CULTURE.

BY HON. WILLIAM T. HARRIS, LL.D., WASHINGTON, D.C.

(Continued from January Number.)

THE so-called "practical" education claims to give the child what he will most need in life, while the education for culture claims that its intellectual discipline gives such a solid basis of character and such versatile powers of thought that it will in the end prove far more practical than the narrow and concrete curriculum which is supposed to fit the pupil for business.

It does not appear that nations divide on this question into two opposite tendencies. Rather it seems that, in each national system of education, both tendencies are active and in a state of unreconciled tension against each other.

Inasmuch as the school ought to have both these tendencies and have them properly balanced, there is a legitimate effort on the part of each to find a more suitable form in which it may offer its curriculum to the school. New devices are invented from time to time and commended for adoption.

But it often happens that a really good device in education gets recommended at first on wrong grounds. For example, the kindergarten was advocated on the ground that it utilized the children's play for serious ends. But that seemed to wise educators to ignore the true use of play itself, which is of great service in developing a sense of personality in the child. By perfect freedom in acting out his own caprices in play, the child comes to know himself—play is a sort of self-revelation.

But to turn play into work is to

destroy this feature of it. So to turn work into play on the other hand is a serious mistake, for it prevents the development of the secondary and deeper personality which feels satisfaction in subordinating itself for rational purposes. For, in work, the man gives up his own likes and dislikes, his whims so to speak, and conforms to the requirements of some external necessity. He gives up his subjective preferences and adopts what is objectively necessary. This is what we call "rational."

This first ground of the advocates of the kindergarten was therefore a bar in the way of the progress of its adoption as a link or member of the school system.

But when it came to be discovered that the true kindergarten does not turn play into work, nor work into play, but that it furnishes a very ingenious graded course of school exercises which develop in the child an interest in doing serious tasks, while it at the same time preserves and protects in the gentlest manner the delicate individuality of the young pupil, then the kindergarten began to commend itself to all wise educators as a sort of transition from the education of the family to the more severe and exacting education of the school as it is and has been.

So, too, in the case of manual training which has been pleading for a place in common school education. It was at first defended on the preposterous ground that it is educative in the same sense that arithmetic, geography, grammar and natural science

are educative. This caused the new claimant to be distrusted by all teachers who had investigated what is called the educational value of the several branches of study. For it was known that each branch has its specific function and that no one branch can take the place of another. Arithmetic and other mathematical studies open the window of the soul that looks out on the physical universe and shows the necessary laws of matter and motion. On the other hand, grammar opens a window of the soul that shows the operations of the mind itself. For the mind has revealed itself in nature language and shown its logical in the structure of the sentence and in the functions of the parts of speech.

Geography, on the other hand, shows the social structure of the world of humanity. It shows the interdependence of one individual on another, and of one community on another. Through division of labour and through distribution of peoples in all parts of the world, the fruits and productions of all climes and conditions are made use of. Commerce is a great world process that collects all these articles of food, clothing, shelter, luxury, amusement and culture, and distributes them again to each section and to each individual, so that all share in the labour of each, and each in that of all. Thus geography opens a window of the soul that reveals to the pupil this great industrial process going on at every moment in all parts of the world, and he learns to see himself as related to this process and thereby gains a rational self-consciousness. For a rational self-consciousness is the perception of the larger self of the race: the social whole acting to reinforce the individual and assist him in his efforts to conquer nature and gain a supply of food, clothing and shelter without sacrificing his higher spiritual manhood in mere drudgery.

History shows us the higher selves of man organized into the form of institutions, the family, civil society, the State, the church, each realizing man's higher rational self in such a manner as to reinforce the puny individual. It thus opens a window of the soul which affords a vast survey of human nature. Literature exhibits the process by which feelings arise in the soul and become distinct ideas, and afterwards pass over into convictions, and then become actions.

The insight into the educational value of these general school studies caused the plea for manual training to be slighted at first, because of the evident absurdity of its claim to an educational value of the same kind as studies that open the windows of the soul.

But then it came to be considered later that modern civilization rests on productive industry, and that productive industry uses labour-saving machinery as its chief instrument to emancipate human beings from drudgery; that it takes the hand-worker and turns him into a brain-worker—for the machine does the hand work but it requires a brain to direct it. Hence productive industry needs more and more directive power, and less and less mere sleight of hand. Machinery increases the productive power of labour a hundred fold, and certainly the youth of the rising generation needs some general training in school which enables him to understand both the construction and the management of machines.

Now the manual training school has hit upon just the course of study and practice that will teach the pupil the construction of machines out of wood and iron. Manual training will therefore have its justification as a part of the common school curriculum.

The youth will, thus educated, find himself at home in a civilization which is more and more accumulating in-

ventions of all sorts and descriptions to perform the work necessary to supply our people with food, clothing and shelter at so cheap a rate as to leave a large surplus of income to purchase means of luxury, amusement and culture. Gladstone has estimated that, in 1870, eight millions of labourers in Great Britain performed with the aid of machinery as much work as the total labouring population of the globe could perform without the aid of machinery.

The studies and disciplines of the school open the windows of the intellect upon all points of the horizon of existence, and they train the will to labour at what is most difficult because most unusual for the animal nature. The lower organized human being can work with his hands with pleasure, while it is still a task of great difficulty for him to contemplate ideas or undertake any sustained train of thought. If youth can be taught to bring their powers to bear on such subjects as arithmetic, grammar, history and literature, they certainly can with ease give their mind to any form of manual training or the work of external observation, because the greater includes the less, and the studies of pure science are far more difficult to carry on than studies in applied science.

The first step above the brute instinct begins when man looks beyond things as he sees them existing before him and commences to consider their possibilities; he begins to add to his external seeing an internal seeing; the world begins to assume a new aspect; each object appears to be of larger scope than its present existence, for there is a sphere of possibility environing it, a sphere which the sharpest animal eyes of lynx or eagle cannot see, but which man, endowed with this new faculty of inward sight, perceives at once. To this insight into possibilities, there loom up

uses and adaptations, transformations and combinations in a long series stretching into the infinite behind each finite real thing. The bodily eyes see the real objects, but cannot see the infinite trails; for they are invisible except to the inward eyes of the mind.

What we call directive power on the part of man, his combining and organizing power, all rests on this power to see beyond the real things before the senses to the ideal possibilities invisible to the brute. The more clearly man sees these ideals, the more perfectly he can construct for himself another set of conditions than those in which he finds himself.

Men as tool workers, as managers of machines, participate in this higher kind of perception in different degrees, but all have it to some extent. The lowest human labourer has the dimmest notions of these ideals; they are furnished him by others; he is told what to do; he furnishes the hands to work with, and some one else furnishes the brains or most of the brain work. Unless a directing mind is near by to help at every moment with the details of some ideal, the rude labourer ceases his work, having no knowledge of what is required next. His capacity to grasp an ideal is small; he can only take it in tiny fragments—small patters dealt out to him as a hand by the directing brain of the overseer or "boss."

It seems a waste of power to have two brains to govern one pair of hands. It is evidently desirable to have each labourer developed in his brain, so as to be able to see ideals as well as to realize them by his hands.

There are different degrees of educated capacity, due to the degree in which this power of seeing invisible potentialities or ideals is developed. The lowest humanity needs constant direction and works only under the eye of an

overseer ; it can work with advantage only at simple processes ; by repetition it acquires skill at a simple manipulation. The incessant repetition of one muscular act deadens into habit, and less and less brain work goes to its performance. When a process is reduced to simple steps, however, it is easy to invent some sort of machine that can perform it as well or better than the human drudge. Accordingly, division of labour gives occasion to labour-saving machinery. The human drudge cannot compete with the machine and is thrown out of employment and goes to the almshouse or perhaps starves. If he could only be educated and learn to see ideals, he could have a place as a manager of the machine. The machine requires an alert intellect to direct and control it, but a mere "hand" cannot serve its purpose. The higher development of man produced by science, therefore, acts as a goad to spur on the lower orders of humanity to become educated intellectually. Moreover, the education in science enables the labourer to easily acquire an insight into the construction and management of machines. This makes it possible for him to change his vocation readily. There is a greater and greater resemblance of each process of human labour to every other, now that an age of machinery has arrived. The differences of manipulation are grown less, because the machine is assuming the hand work and leaving only the brain work for the labourer. Hence there opens before labour a great prospect of freedom in the future. Each person can choose a new vocation and succeed in it without long and tedious apprenticeship, provided that he is educated in general science.

If he understands only the theory of one machine, he may direct or manage any form of it. He could not so easily learn an entirely differ-

ent machine, unless he had learned the entire theory of machinery. The wider his knowledge and the more general its character, the larger the sphere of his freedom and power. If he knows the scientific theory of nature's forces, he comprehends readily not only the machine, but also all of nature's phenomena as manifestations of those forces. Knowledge is educative in proportion to its enlightening power or its general applicability. The knowledge of an art is educative, because it gives one command in a sphere of activity ; it explains effects and enables the artizan to be both brain and hand to some extent. A science lifts him to a much higher plane educatively, because he can see a wide margin of possibilities or ideals outside of the processes in use and outside of the tools and machines employed.

There remains a permanently valid place for the manual training school, side by side with apprentice schools for all youths who are old enough to enter a trade and who are unwilling to carry on any further their pure culture studies. Cultivate the humanities first and afterwards the industrial faculties. In our civilization, there ascend, out of the abyss of the future, problems of anarchy on the one hand and of socialism on the other ; individualism carried to such extremes that all subordination to peaceable and established law is deemed a fetter to freedom. This centrifugal tendency to anarchy is paralleled by a centripetal tendency that wishes, not only to have the central government perform all the duties of establishing justice and securing the public peace, but also to have it own all the property and manage all the industries. In short, the "nationalists" propose abolishing the sphere of competition and individual enterprise. Education in the history of the world, and in the literature that reveals

the aspirations of the human heart, is well-calculated to prepare the youth for a rational verdict on the extreme issues that will continually arise among a free people. Above all, we must never yield to the economic spirit that proposes to curtail the humanizing studies in our schools, for the sake of adding special training

for industries. Rather must we do what we can to extend the period of study in pure science and the humanities, knowing as we do that all, which goes to develop the ability of the youth to see possibilities and ideals, goes to make him a more productive labourer in the fields of industry.—
Education.

A MISSING SUBJECT IN MODERN EDUCATION.

BY C. M. JEBB.

MODERN education is more generally supposed to be in danger of suffering from a plethora than from a deficiency in the subjects of instruction. Schoolmasters and mistresses groan over daily expanding time-tables, and their pupils respond with lamentations, less deep, perhaps, but not less loud. Yet, spite of this distressing state of things, we feel impelled to make a claim in favour of one subject which scarcely seems to receive the attention it merits. There may be conditions under which general ignorance in one particular direction becomes little short of a national disgrace, and we believe that these conditions apply in the present case. The subject we speak of cannot be called a new one; it is that branch of instruction commonly known by the name of "Scripture."

Lord Sherbrooke, in one of those delightful tirades against public-school education wherein his soul rejoiced, complained of the almost universal ignorance of the Bible, even among educated men. The "Cave of Adullam," wherein he played so prominent a part, had lately received its title, and, much to his surprise, the jest had fallen flat with most of his parliamentary acquaintances, from entire ignorance of what the name

implied, so that he had been under the "painful necessity of explaining it, and thereby pointing the barbed arrow against his own bosom."

Most of us have had experiences of this kind of ignorance, of a less personal nature, probably, than that so touchingly related above, yet no way less startling. It would be too sweeping, certainly, to call this ignorance universal. Some Sunday scholars are exceptions at one end of the line, and most literary men at the other. Lord Macaulay's well known dictum, that "any one who sets up to be a critic should have the Bible at his fingers' ends," is generally recognized by those whose way in life lies among the paths of literature, and some few intelligent children from the working-classes, who have been fortunate in their Sunday school teacher, are sufficiently interested in anything which affords a change from the dry bones of board-school instruction, to acquire a fairly thorough knowledge of, at any rate, the text of Scripture. The clergy, also, must of course be excepted, and a certain number of ladies, whose intellectual powers have been excluded by circumstances from every field but that of Sunday school teaching. Having thus admitted the existence of those exceptions which

prove the rule, we may proceed to consider the working of the rule itself.

The question has become considerably more complicated since Lord Sherbrooke made the speech we have quoted from, some thirty years ago. People in those days knew as little about the Bible as they do now, but they did not imagine themselves to know a great deal. As for Biblical criticism, which now forms one of the commonest topics of conversation in all societies, public interest in it had not been roused to any great extent, and it was generally left to those who had some claim to be heard.

It is in no way our intention to deal with this matter on religious grounds, such a method of treatment being clearly out of place in an article like the present. The two names quoted above, Lord Sherbrooke and Macaulay, indicate from one side the point of view in which we consider the question. It is not generally disputed in this country, that, from a literary standpoint, ignorance of the Bible is to be deprecated. The value of our Authorized Version, as a masterpiece of classical English, and a treasury of ancient literature, is still so universally acknowledged, at any rate in theory, that further discussion of this aspect of the question is scarcely necessary. But the literary side of the question is not the only one to be considered. There can be no doubt that many issues of grave national importance, political and social, are being debated, and will be decided, on grounds in which the Bible, its interpretation, and its claim to authority, play a principal part. Such being the case, it would seem desirable that some knowledge of the text of Scripture, and of a few elementary facts regarding its history, should be diffused among that great majority with whom the decision will ultimately rest.

At present (to judge from the tone

in which they are discussed in ordinary society) it would not seem that the general public know exactly why they espouse one side or the other in these questions. There is no lack of interest in such topics, only an utter want of solid information regarding them. Such ignorance is not specially creditable to those who profess to be loyal members of some one or other of the Christian churches, and who have presumably received some Scriptural instruction. But this is not so surprising as the fact that those who manifest the most distinct and aggressive hostility towards Christianity in any form are no better instructed than they. This is surely no paradox, for it is evident that persons actively attacking any set of institutions or opinions, which has gained the sanction of time and custom, assume an attitude of greater responsibility than those who lazily acquiesce in them. And probably disputants of this kind would be the last to deny such an axiom, for the most remarkable phenomenon connected with them is their entire belief in their own knowledge. The extraordinary nature of their statements is only to be equalled by the perfect good faith in which they are uttered. In this respect they present a striking contrast to the orthodox party, whose general characteristic is a kind of vague uncertainty as to whether any given text or episode occurs in the Bible or not. They seldom have the courage to make what a certain professor called "a good mistake," and there is a general tendency about them to acknowledge that they are probably wrong, which excites compassion if not respect. They may go the length of confounding the two Judases, or quoting "They are not lost, but gone before" as an integral part of Scripture, but they rarely move our amazement and laughter as do their opponents.

An ordinarily minded person, for instance, who happens to have read the original story, is liable to be somewhat startled when informed, with an air of calm conviction, that David, after his trespass in numbering the people, was offered a choice between bearing the penalty in his own person and inflicting it on his subjects, and chose the latter alternative. It is not an easy matter to trace the connection of ideas here. Perhaps this version was suggested by that prayer of the stricken king: "As for these sheep, what have they done? Let Thy hand, oh Lord, be on me and on my father's house." For strict accuracy and close attention to fact the above statement is perhaps rivalled by one regarding the terrible story of Uriah, which was said to be related without any accompanying blame. Probably the originator of this last had heard and even used the often-quoted phrase about the "little ewe lamb," but doubtless it is one thing to round off your sentences with a quotation, and another to know where it comes from. It is a comparatively trifling matter to hear that St. Paul persecuted Christianity for twenty years before his conversion; in fact, the instinctive grasping at a round number argues a love for symmetry gratifying to the æsthetic sense.

But it is in what we may call Biblical criticism that disputants of this description chiefly shine. And here again they differ in a remarkable manner from the opposing party, who are generally filled with vague horror by the very name of such a thing. But their light-hearted assailants are never so happy as when authoritatively laying down views unknown to the majority of critics (on all sides). The fourth Gospel was discovered by Cyril of Alexandria: so we were once informed as an undoubted fact. "Why not Martin Luther at once?" was the comment of a well-known scholar

on hearing this anecdote. We greatly doubt whether the antecedent improbability of this latter alternative would suggest itself to a mind which willingly embraced the former. The world has heard of the schoolboy who, under examination torture, ascribed the authorship of the Bible to Milton, but it is not likely that this schoolboy was serious in his statement. Yet we have heard it seriously propounded, and not by a schoolboy, that M. Renan's *Vie de Jésus* is valuable as an independent biography, drawn from different sources to those used by the four Evangelists.

The comment naturally suggested by the few instances given above is that these gems of criticism, and the persons who produce them or believe them, are scarcely entitled to serious consideration. That they do not proceed from sound scholars or profound thinkers is obvious enough, but unfortunately the great majority of mankind belongs to neither of these categories, and, as we have already said, it is the great majority we must consider. The present writer has heard all the above assertions, with others similar to them, made by persons decidedly above the average in ability and not below it in education. It is a striking and not exhilarating fact that on one set of subjects only should this kind of dogmatizing be possible. A man does not think himself a competent authority on science, law, or even art, because he knows the names of a few "leaders of thought" in any of these directions, and has entirely misunderstood a few of their utterances. If he makes such pretensions, he is apt to be somewhat roughly relegated to his own level, even in the most ordinary society. But the critical interpretation of Scripture opens up a happy hunting ground to all who love discussion better than study. Is this a subject, then, so simple and easy to be under-

stood? Readers of M. Renan will remember the exquisite passage in which he describes the sacrifice of his whole life, of all his time and talents to the study of Scripture, and the delicate irony with which he adds his conviction that the average Parisian *gamin* who spares himself all this trouble, and disbelieves without knowing why, is much the wiser of the two. Those who have been privileged to attend his lectures can bear testimony to the patient and careful research which every step of his exposition reveals, and the enormous difficulties with which he patiently grapples. To be able in any degree to appreciate the results of such labour requires something of that honest work and thought which are necessary for the appreciation of great discoveries (or what pass as such) in any other branch of learning.

One sometimes wonders whether the acknowledged leaders of opinion on both sides do not feel themselves slightly embarrassed by the mental

condition of their followers, as is said to be often the case with parliamentary leaders. Will they not ever determine on "educating their party"? It is true that on both sides something is done in this direction. On one side, we have numerous books and pamphlets issued. On the other, the side which has hitherto been the ruling one, we find an appearance of systematic instruction for younger members. Public school time-tables generally contain one weekly Scripture lesson at least, and Paley's ghost is as yet unlaid at one of the great universities. Yet, somehow, on both sides, the results are as we have described them. On both sides there is the same absence of thorough study, and, alas! the same lack of fairness. May we hope for any improvement, or are we hurrying on to a time when people will be more honest than they are now, and openly confess that they care for none of these things, and therefore do not study them? — *Journal of Education.*

THE PLACE OF THE CLASSICAL LANGUAGES IN MODERN SCHOOLS.

THERE is no subject which demands more pressing consideration at the present day than the place which Latin and Greek shall hold in a modern education. In discussing a question of this kind, it is worth while to enquire how the classical languages came to hold the position in English schools which is at present given to them. Latin stands of course in an exceptional position. It was at one time the common language of the civilized world; from it some of our most important modern languages have sprung. Before these local dialects grew into languages, Latin was the only means of intercommunication

between men of letters. Long after this period, almost, indeed, unto our own days, the knowledge of Latin was indispensable to a man of learning. Milton's "Tractate on Education" is a proof of this. It is generally regarded as a compromise between the claims of humanism and those of realism, and to the superficial reader it appears to make too much concession to the dead languages; but on a closer inspection this is seen not to be the case. Cato, Columella, and Cebes are recommended to the young student, not because they are Latin, but because they are written in the foreign tongue which it was at that

time essential to learn. At the same time it is true that, when Milton wrote, Latin was regarded not merely as a means of intercommunication, but also as a training of the mind. Let us see how this came about. The later Renaissance, besides introducing into Europe the study of Greek, gave great impulse to the Study of Latin. The explanation of the best Latin classics, now for the first time possible, took a strong hold upon the imaginations of men; a new discovery of Muretus or Politian reverberated throughout Europe just as a new discovery in science does at the present day. Admiration was followed by imitation. The pens of scholars were employed in imitating the prose of Cicero and the verse of Ovid. When this enthusiasm was at its height, the Reformation came. It produced a break not only with the old religion but with the old learning. The standard of education throughout Protestant Europe declined. In Protestant Germany everything had to be created anew. The task of doing this fell to Melancthon, who is justly called the Preceptor of his country. Melancthon was by nature first a scholar and then a man of learning. He probably intended to revive in Protestant schools that encyclopædic education which was characteristic of the Middle Ages. But he naturally began with the three studies of the *Trivium*—Grammar, Dialectic, and Rhetoric—that is, a minute study and a close imitation of the masterpieces of Latin. The impulse thus given to what we call humanism was, as is well known, continued and made stronger by John Sturm, who was headmaster of the Gymnasium at Strasburg during a large part of the seventeenth century. He instituted a rigid system of instruction in Latin, and mainly in the Latin of Cicero. His example was followed in other countries, especially in England, and the English public

schools of forty years ago reproduced with considerable faithfulness the system of Sturm, modified by the later inventions of the Jesuits. From this slight sketch we see that the teaching of Latin in the present day has nothing very special to recommend it. It has long ceased to be of any practical use. The faculty of writing Latin prose, although much valued in examinations, is of no particular service. The time is passed when every platform speech must contain a quotation from Vergil or Horace. The modern judgment upon Greek and Latin writers has reversed that of our forefathers. The style of Cicero is discredited; Lucretius and Catullus are preferred to Vergil and Ovid. From the point of view of literary education, we might readily dispense with a knowledge of the Latin Classics in the original tongue.

The study of Latin is generally defended on other grounds. In the first place, it is considered hopeless to attack it; the glamour of the middle ages still hangs over us, and there are many who consider the difference between a learned or an unlearned man to be marked by his knowledge or ignorance of Latin. Secondly, it is the acknowledged parent of the Romance languages, and is therefore supposed to be the best avenue to their attainment; and lastly, Latin grammar has been so thoroughly elaborated, and is capable of being so completely taught, that it has often been taken as the type to which all other grammars should conform. At the same time, the peculiarities of the Latin sentence are not indigenous to any modern tongue, and there is no modern language, except Icelandic, which has not been injured by its influence. If one of the dead languages had to be given up, I should unhesitatingly choose that it should be Latin. Everything that is really valuable in humanistic education

comes to us from Greek, and from Greek alone.

Let us now trace the history of this second language. We may consider that Greek was very little studied in the middle ages. Dante probably knew nothing of it ; Aristotle was read by the schoolmen in a Latin version of an Arabic translation of the Greek original. The study of this language did not become general until after the capture of Constantinople by the Turks in 1453 ; the second Renaissance was deeply affected by it ; but it had little or no influence on the first. What I have said before of Latin in this epoch of history, may be repeated, with equal truth, of Greek. It was studied with the same enthusiasm throughout the civilized world ; a new reading or a new version spread like wildfire through Europe. The study of Greek, as well as that of Latin, fascinated not only by its intrinsic value, but appealed to that love of excitement and notoriety which will always deeply sway the human heart. The Reformation had an influence in developing the study of Greek, as we have shown above ; and it assumed, together with Latin, a larger importance, even in the more enlightened parts of Europe, than was ever contemplated for it. By the time that Ratic and Comenius appeared upon the scene, with their teaching of realism, which was destined to have so much influence on education, the yoke of the humanities was so firmly fixed that it could not be shaken off. The Catholic reaction of the seventeenth century was not favourable to educational reform. The political troubles, of the same epoch, prevented energetic action in Protestant countries. The apathy of the eighteenth century succeeded to the wars and rebellions of its predecessor. The agitation due to the French Revolution, and to Napoleon, again prevented improvement, and therefore it has not

been until our own day that we have had leisure and opportunity to review our educational system, and to see whether it corresponds with the demands of the age in which we live.

If what I have said about the historical aspect of the question be true, the study of Greek and Latin cannot claim any special importance on the score either of antiquity or of deliberate choice. Nor, indeed, has the study of language, as such, any great prestige to recommend it. The Greeks themselves, who were not a badly educated people, learned no other language but their own ; their very name for foreigners implied that in their opinion they talked gibberish. The Romans learned Greek, not so much as a linguistic exercise, as for the sake of studying Greek literature. Horace advises his readers to pore over Greek examples night and day, as Lord Macaulay once advised two undergraduate nephews to steep themselves in Plato. Greek does not appear to have had much influence over the forms of Latin sentences. Caesar, the greatest of all Latin writers, was purely Roman. Cicero learnt his style we know not where ; probably in Asia, certainly not at Athens. The Greeks derived their culture from the Egyptians ; but it is more probable that the Egyptian priests knew Greek than that Greek travellers knew Egyptian. The Greeks and the French have left us a splendid example of what may be effected by the study of the mother tongue, but that is of no value in determining the utility of learning an ancient tongue.

Still I have no desire to minimize the great educational effect of the study of Greek. No language compares with it as a vehicle for thought. If we cast our eye over the field of Greek literature, what a diversity lies before us. Each writer that has come down to us has his own distinct individuality, so that the Greek scholar

writing the language does not simply write Greek, but imitates the diction of Homer or Plato or Thucydides, of Sophocles or of Herodotus. The language, besides being beautiful and musical in itself, full of variety and of diversity of tone, fits the mind of him who uses it as closely as a glove fits the hand. Lord Macaulay said in his later years that he never read Thucydides without a feeling of despair. The construction is often difficult, sometimes impossible. As we read we penetrate without difficulty into the subtle shades of meaning, but we cannot translate intelligibly without a long periphrasis. The exercise of making out an author of this kind gives strength and pliancy to the intellect, which could hardly be gained by reading any number of *Times* leading articles, admirably as they are composed. A similar effect is produced by tracking, throughout their ramifications, the subtle argument of Plato's dialogues. I am myself under deep obligations to this kind of training. My master at school was very fond of reading Thucydides with me. I made it a point of honour never to learn the lesson, and when "put on" had to make out the sense on the spur of the moment. I adopted an ingenious device to gain time. My master was a very able man, of well-filled and discursive mind. At any provocation he would go off into talks on general subjects of a most stimulating and interesting nature, and of different length. I, therefore, treated him as Meilanion treated Atalanta. Keeping my finger on the sentence which I had last construed, I strained every effort to work ahead. If my tutor's discourse was coming to an end I dropped another apple, for I had got to know precisely how much each subject was good for—one, two or three minutes. The valuable breathing space was utilized by me to the utmost, and in the end

I gained far more by not having learned my lesson than I should ever have gained if I had prepared it. The modern plan is, I believe, to put up the crib before you, to compare alternately the crib with the original, and the original with the crib, and to note whether the translator has done his work efficiently. If Greek were to disappear, this training would be lost, but at present how few obtain it, and how seldom is the study of Greek defended on the grounds which I have just advanced!

In order to come to a proper conclusion as to the place which the classical languages should occupy in modern education, we must take a general survey of the present condition of knowledge. All education which is worth the name should conduce to a definite end. But at the present day it would be difficult for a master to pronounce at any given moment what particular end he was aiming at in the education of any particular boy. The education of our public schools, which gives the tone to all other forms of secondary education, has never been subjected to a thorough revision. We have retained the old classical basis, which was once an end in itself, and we have added to it mathematics, modern languages, history and science. We attempt to embrace everything and to surrender nothing. We do not even allow specialization, because in our public schools questions of discipline and even questions of society are quite as pressing as questions of education. There arises therefore an internecine strife between these conflicting claims; each study obtains what it can in the struggle; and, as when thieves fall out honest men come by their own, so, while masters are squabbling as to what they shall teach, athletics and amusements, which have a clear and simple end in view, and which always know their own minds, step in and oc-

cupy the field. Therefore, as Mr. Gladstone wrote thirty years ago, the most crying want in the education of the present day is to distinguish between what is principal and what is subordinate.

Now it appears on investigation that there are four main lines on which education may be based: the classical, the mathematical, the scientific and the line of modern literature. This last has never been developed to the fulness of its power, and I believe that it is capable of very wide extension. Let us leave it alone for the present, and say a few words about the educational value of the first three. What effect do they severally produce upon the mind, regarding them as *organa* or instruments of thought? Science makes great pretensions for itself at the present day. Mr. Herbert Spencer has told us that is the only subject worth learning. It bases its claims partly upon its intrinsic importance—asserting that, whereas in other subjects a little knowledge is a dangerous thing, in science the very smallest modicum of knowledge has its own definite value—partly upon the stimulus which it gives to the faculty of observation, but principally upon the certainty of its conclusions. It claims to teach what is, to believe in nothing, to ask its learners to believe in nothing which cannot be seen, weighed and handled.

Now, it is in this very striving after certainty that the weakness of science lies. In all departments of human speculation, just in proportion as we become certain we become false. The mind of man is incapable of ascertaining absolute truth upon any subject; all it can reach to is a very high degree of probability. There is no reason to believe that, if the Creator could give an account of the universe which He has created, it would correspond in any particular to what we imagined that we knew

about it. We have long ago learnt that time and space have no real existence, but are merely limitations of our own minds. The motions of the heavenly bodies, so far as they are known to us, are at present accounted for by what we call the Law of Gravity, the discovery of which is reckoned as a triumph of inductive reasoning. But if our faculties were enlarged even to a comparatively small degree, we might find that these motions are capable of an entirely different explanation. Scientific generalizations are nothing more than attempts to comprehend, under a single expression, facts or phenomena which are thus more easily apprehended and remembered. To say that they are truths is to beg an important question, and still more to say that they are the only truths. In the most complicated affairs of life we make no such claim to certainty. In law and politics, in love and war, we have to content ourselves with probabilities. The same also is true of the deepest questions of religion, and of the relation of the seen to the unseen. A mode of reasoning, therefore, which is based on certainty has not only a narrow scope, but the habit of using it unfits the mind for the solution of those most important questions which can be decided by probability alone. I do not mean to say that the highest scientific minds—those of Darwin or Huxley—do not make use of probability in their investigations, but this privilege is reserved for the chiefs alone. Science claims to be a good training for the rank and file, because it is certain; this very certainty, in my opinion, makes it a bad training.

A similar charge may with good cause be brought against mathematics. They teach habits of accurate reasoning, but they do not, except in their highest developments, stimulate the imagination, or accustom the mind to

that familiarity with probabilities which is after all the highest degree of certainty which the human intellect is capable of acquiring. The great merit of the Greek and Latin classics is that their study does develop this habit of mind to a very great degree. Let me take two examples. Suppose that a number of students translate a passage of Shakespeare into Greek iambics. A competent scholar will have no difficulty in determining the varying degrees of merit among the several versions, and there would be found a concensus amongst competent scholars on these points, which would astonish anyone who was not familiar with such matters. Yet if for some reason or other the decision of these judges were disputed in a court of law, they would find it extremely difficult to assign reasons for their opinion which would satisfy the average intelligence of a British jury. Probably no reason could be given which would not break down under the cross-examination of an experienced counsel. Yet the opinion would be no less valid for that; it would be based upon an absolutely certain instinct, derived from the habit of weighing probabilities, which had become a second nature. Again, if a particular emendation is suggested in a corrupt passage of a Greek play, a practised scholar would be able to assert that a particular reading must be the right one, or perhaps, more often, that it cannot possibly be the right one, yet it would be almost impossible to explain in words precisely the reasons which determined this decision. It is this power of training a careful and well-balanced judgment that gives to classical studies their special and peculiar value.

I should, therefore, be inclined to conclude that of the three curricula which I have mentioned, the scientific, the mathematical and the classi-

cal, the last is by far the best, if it is applied to a mind suited to it. It is not difficult to ascertain at an early age whether a boy is likely to turn out a scholar or not. The class of mind which attaches a value to language, and is capable of appreciating minute differences of style and idiom, is one which reveals itself by unmistakable signs.

It is true that there is a school of educationists who think that all natural tendencies should be repressed, and the presence of a special faculty is a reason rather for repressing, or, as it is called, correcting it, than for developing it. This I do not believe. Observation of growing minds has taught me long since that more time is gained, and the best results are produced, by training the mind in that direction to which nature points, and that the cultivation of one faculty is the best means of strengthening all the rest. But of this classical curriculum, Greek is the most important part. Greek is not only more educative than Latin, but is far more suited to be learned by tender minds. Greek not only appeals to the mature intellect by its subtlety and refinement, but, by a certain childishness and simplicity, to the intelligence of a boy or girl. It is difficult in Latin to find any classical author which is really suited for beginners. On the other hand, a child will take quite naturally to the *Odyssey*. The way of telling the story suits it, and there is charm in the narrative, which sounds like a fairy tale. Therefore, I say fearlessly that if classical education is to be maintained, and if one of the two classical languages has to be sacrificed, I would rather it were Latin than Greek. Also there is great danger of the standard of classical education being seriously lowered by the sacrifice of Greek.

(To be continued.)

WASTING OUR BLESSINGS.

THE people of the present day are working far more to the disadvantage of future generations than if they were piling up a mountain of mere pecuniary indebtedness to be paid by those who shall come after us. Money can be earned with comparative ease when material is abundant and the forces of nature can be harnessed up like docile beasts to do our bidding; but when the new material is absent productive labour is difficult, if not impossible. The prodigal waste of our supplies of natural gas, oil, coal, and iron may well suggest the questions: Are we not wickedly dissipating what should of right be enjoyed by future generations? and What would be our condition to-day if the people of a century or two ago had been as wasteful of these resources as we are now? It is stated that in some parts of Western Pennsylvania the street lamps are allowed to burn all day because the supply of natural gas is cheaper than the labour needed to light and extinguish the lamps each twenty-four hours. In Indiana many of the natural gas wells are wantonly set on fire for the sake of display of huge volumes of flame, involving the consumption of an enormous amount of fuel that ought to be utilized now or saved up for years to come. Some of the Russian wells in Baku are allowed to burn out in the same way. The coal and iron mines of Great Britain have been drawn upon so lavishly in the last few years that the cost of producing the latter is daily growing, and the former is made the subject of computations which point to the exhaustion of the supply within a small number of years, and in a few decades from this will render its mining unprofitable because of the great depths from which it will

have to be brought to the surface. The process has not been carried so far in the United States. As yet we have not exhausted the bulk of the immense deposits of both coal and iron which it took Nature millions of years to deposit near the surface for our use. We have, however, already exhausted the larger part of our timber supply, and perhaps worked an injurious change of climate thereby, acting in small degree on the ruinous policy, or absence of one, which has made mere treeless wastes areas which were once the seat of mighty empires in Western Asia. Civilized man is wasting recklessly and wickedly the good gifts of Providence, and at a rate which threatens to bring round in another quarter of a century conditions widely different from those of to-day, unless the waste be checked. By that time probably we shall have not a single unexhausted pocket of natural gas, a very scanty supply of petroleum, comparatively little timber, and possibly a poorer climate as a consequence of the latter. By that time the English mines will have been worked down to near the unprofitable limit, and those in the western part of the European continent be much nearer the point of exhaustion than now. Fifty years hence the New World may prove to be the most important source of supply for coal and iron to the Old, and in the course of a second half-century our own deposits of coal and iron may have been drawn upon so extensively by the widening demand as to raise still other questions than those broached at the head of this article. It may then be considered desirable to ask if there be not some other available source of artificial heat besides the combustion of coal, and some other metal which can be

used in place of the iron and steel, the uses for which are constantly extending in our own day. It is our duty to defer as long as possible the necessity for solving these problems by the race. We are not called upon to stop using these things for fear of starvation to those who will live after us, but to stop the reckless, wanton waste that is going on all around. The world is an estate in which its

occupants at any time have but a life interest, and no right to use it so carelessly as to needlessly lessen its value to their successors. The old story that we owe nothing to posterity because it has never done anything for us is a mere sophistry unworthy of a rational being, since it is only to posterity that we can hope to pay the debt we owe our ancestors. —*Chicago Tribune.*

EDUCATIONAL WASTE.

EXAMPLES would be trite of the useful improvements in our generation which have utilized in the manufacturing world materials that formerly went to waste. And in the process of training up intelligent, well-educated citizens we have succeeded in making many economies of time and power by improved methods, the result of deeper insight into the nature of the forces at our command. The process of developing a highly civilized human being out of the crude material furnished by ordinary child-nature takes from ten to twenty years in the various stages of "manufacture" and involves the use of a considerable amount of capital. But there is no other branch of industry by which capital can be more certainly or more rapidly multiplied, looking at the question of popular education merely from the standpoint of the political economist. The standard authorities are unanimous in declaring that an educated man by his increased intelligence and trained will power can do more work and with better effect than an illiterate man, even when education has not proceeded beyond the very first stages and has merely enabled the recipient to read and write his own language. Every other valuable asset that can

be produced either by skill of the hand, or by power of thought in the skilful application of capital, must ultimately depend on the physical energy, trained ability, and moral force that belong to the citizens of the country.

This is merely one way of stating an admitted fact—that the training and educating of the physical, mental, and moral powers of the incoming generation is the most important interest in any state, and that the total neglect of it for one generation would mean nothing less than ruin to the nation making the experiment. To argue such a self-evident proposition nowadays would be indeed superfluous labour.

But if the least avoidance of waste is of supreme importance in the manufacture of iron and cotton and chemicals, how valuable must be the least economy in the production of effective citizens by whom all the other wealth of the nation is elaborated. How much more valuable is the "raw material," how much more delicate are the forces brought into play, how much more enduring is the final product! How wickedly extravagant must be any waste of power through misapplication of energy and time in the unreturning hours of youth

when alone it is possible for the average mind to learn the beginnings of that self-education which secures the highest and best results both to the individual and to the state.

The greatest and most inexcusable waste that can be committed is committed when we employ in the primary schools crude, inexperienced teachers with little practical skill and no proper conception of the vast interests both material and spiritual that are entrusted to their keeping. No other economy can be practised that will compare for a moment with the employment of none but thoroughly trained, tried, skilled teachers in the elementary schools. All outward material instruments such as fine buildings, complete apparatus, excellent books, are merely dead, mechanical and powerless without the living intelligence, the mental power, the active soul of the accomplished educator behind them. The teacher is the controlling power and the motive force. In the extreme case it is more profitable for a child to sit on a bare stool or behind a hedge with a real teacher beside him than to occupy a walnut desk in a \$50,000 school with only a mechanical hearer of lessons to guide his gropings after light and intellectual freedom.

Stated in abstract terms, all this shines with the light and self-evidence of a primitive belief; but when we come to look at the practical application of the principle, we see how far accepted theory and actual practice may be divorced. In Ontario, for example, primary education receives a very fair share of attention, and our system has many elements of power not found in other countries; and yet we find that considerably more than half of the teachers employed in the primary schools hold only the lowest qualification permitted by law, and that the majority have not spent as much time in the study

of the theory of education as would suffice to learn the art of making and putting on a common horse-shoe properly. Three months' attention to the special duties of his business and life work would not enable a young mechanic to set up a shop of his own, nor even to engage as a journeyman. No veterinary surgeon with merely a quarter's training would be trusted with the life of a favourite horse; no druggist or dentist would be permitted to endanger human life by his ignorance with such short experience in the work of his profession, no matter what his previous general education might have been. This is precisely the measure of the apprenticeship served by the young teachers who will at the end of the year be licensed to go out to underbid, displace and expel older teachers who have just become fairly efficient — at the expense of their pupils. This cruel prodigality of childhood's single opportunity goes on from year to year, reproducing the same waste of money and of the golden years of youth. Here is the general fact: During their most plastic period we entrust the education of children to crude, unformed and immature teachers, and deceive ourselves with platitudes on our most perfect system — the pattern to be recommended to England — where, let us interject, pupil-teachers have to spend four years and run the gauntlet of examination four times before they receive certificates of the lowest grade; where the Normal School courses extend over two full years, while ours is only a little over four months. Is it not time now to put in practice greater economy of effort and resource, to put an end to this costly sacrifice, and to make more scientific application of our educational machinery? There are other extravagances and wastes that demand attention in our system, but there is no other prodigality that

can equal this one of displacing every year a thousand teachers of some years' experience and filling the vacancies artificially created with a thousand raw recruits, of whom only a small percentage are old enough to be entrusted with the ballot. These annual "crusades of the children" may go on for a century, and at the end the public schools will not be any better than they are now. Nothing short of a radical change in the process of training and licensing public school teachers will avail to remedy the evil. A whole train of bad con-

sequences would be obviated by this one step—starvation salaries, constant change of teachers and poor schools would rapidly disappear if the teacher took his place in the first instance after an extended training, and with the fixed idea that his profession was a permanent and honourable one, well worthy of the highest talents and the greatest devotion. In this rapid age we may easily have faith to believe that the closing years of the century will see this great work accomplished in several of the great civilized nations.—*Preceptor in Week.*

UNITED EMPIRE LOYALISTS.

ST. JOHN, NEW BRUNSWICK, 1783-1883—UPPER CANADA, 1791-1792—
ONTARIO, 1891-1892.

WHAT a memorable day was that 18th of May, 1783, when a fleet of twenty vessels sailed into the harbour of Parr Town, now St. John, New Brunswick, having on their decks and in their holds three thousand refugees, United Empire Loyalists, fleeing from the ruthless persecution of their brethren of the United States, who had succeeded in substituting the Stars and Stripes for the Union Jack throughout all Yankee-
dom.

Parr Town, named after Governor Parr, of Nova Scotia, was at the period a small village, containing probably not more than one thousand inhabitants, but was, nevertheless, the most accessible and important harbour on the Bay of Fundy. Parr Town was still in the ancient Province of Nova Scotia, as at that time the County of Sunbury, then one of the counties of Nova Scotia and in which Parr Town was situated, had not yet been carved out of the ancient Province of Nova Scotia to form the new

Province of New Brunswick. This carving-out process did not take place until August 17, 1784 when the new Province was established, with Thomas Carleton, late Colonel of the 29th Regiment, brother of Sir Guy Carleton, as Captain-General and Commander-in-Chief of New Brunswick, Nova Scotia and Canada.

Parr Town was not only destined to become a place of refuge for the three thousand Loyalists who sailed from New York for that harbour in April, 1783, arriving at their place of destination on May 18, 1783, but many others followed during the summer of 1783, and in the month of October the fall fleet arrived with twelve hundred. Thus we have quite a town established on the shores of the Bay of Fundy, so that at the end of 1783 Parr Town, with its neighbour, Carleton, had a population of five thousand.

The people of Ontario, originally settled by United Empire Loyalists, ought to have a deep and abiding

affection for New Brunswick, St. John, and the inhabitants of these places, for they are, nationally speaking, their kith and kin.

We will mention the names of some of those United Empire Loyalists who settled in New Brunswick. The Rev. John Sayre, when the war commenced, was Rector of Trinity Church, Fairfield, Connecticut. He drew lot 36, Dock Street, Parr Town, then removed to Maugerville, on the River St. John, and died August 5, 1784, in his forty-eighth year. His daughter Esther married Christopher Robinson, and shortly afterwards left with him for Upper Canada. Mr. Robinson was appointed Deputy-Surveyor-General of Crown Lands. He was the father of Sir John Beverley Robinson, late Chief Justice of Ontario, and grandfather of Hon. John Beverley Robinson, ex-Lieutenant Governor of Ontario.

We had at one time in Toronto a street called Sayre Street, which ought to have remained so *in perpetuo*, but the wisdom of City Fathers have erased the name and given the street the name of Chestnut Street, probably because there are no chestnut trees on the street.

On the walls of the County of York Law Association Library, in the Court House, Toronto, there is suspended, in a frame, a letter written in 1807 by the Hon. Robert Thorpe, one of the Judges of the King's Bench of that day, presented to the Library by Mr. James Sears, of New York and Toronto; a devout lover of literature and antique art.

The family name of Sears is a very old one in Parr Town (St. John). The first child born in Parr Town was a daughter of Thatcher Sears, at the time living in a tent at the Market Square of St. John. There is, in the Market Square referred to, a public drinking fountain, presented to the City of St. John by William Macara

Sears, a grandson of Thatcher Sears. The Market Square is a notable place in St. John, for it was within that Square that the first landing of the Loyalists was made in 1783.

I need not refer to the Peters of New Brunswick or the Jarvises and Merrits more than to state that their names are so familiar to Canadian ears that it will take a long time indeed before they are obliterated from their memories. They were of the true old stock of U. E. L. who equally impressed the New Brunswickers and Canadians with their individualities.

The name of Ludlow is one not unfamiliar to us. The Hon. Gabriel Ludlow was a New York Loyalist, and through the war commanded one of the Loyal American Regiments. He was the first Mayor of St. John after its incorporation in 1785. In 1795 he resigned the office of Mayor, and in 1803, when General Carleton left for England, Col. Ludlow, as senior Councillor (after Chief-Justice), was sworn in at St. John, President and Commander-in-Chief, residing at Carleton, except during the meeting of the Legislature. The residence of Col. Ludlow is standing and known as the "Old Government House." I will not pursue the subject further, lest I transcend the limit of a newspaper article.

It is gratifying to know that the New Brunswickers, and, notably, the people of the City of St. John, have, ever since 1783, periodically celebrated the landing of the Loyalists in their historic town, the oldest town in the British Provinces. On May 18, 1833, their Semi-Centennial year was ushered in by the firing of cannon. In the evening a dinner was given by the Corporation in the Masonic Hall, head of King Street. The chair was taken by the Mayor of the city, John Wilmot, Esq. On his right was the Lieutenant-Governor, Sir Archibald Campbell; on his left, the father of

the city, the venerable John Ward. When the toast of the day was given, a salute of fifty guns were fired by the City Artillery, from King Square. The Loyalists at this meeting, while celebrating an anniversary of the land they had come to, were not forgetful of the land they had left. This was the toast of the day: "The land our ancestors left, and the land we live in; both inhabited from one common parent, and enjoying, though under different governments, the blessing of freedom. May old animosities be forgotten, and the present good understanding continued."

This being the Centennial Year of the erection of Upper Canada into a separate Province, and the next year being the year of the establishment of its government, we may with fitness imitate the United Empire Loyalists' descendants in New Brunswick, who, in a right loyal manner, celebrated their Centennial in 1783.

And here let me refer the reader to that good citizen of St. John, J. W. Lawrence, corresponding member of

the New England Historical and Genealogical Society, and Honorary Member Worcester Society of Antiquity, who has in his "Foot Prints, or Incidents in Early History of New Brunswick," given us so much food for thought, and of what may be useful in the Centennial celebration of Ontario. Especially would I refer to his able paper on "New Brunswick Centennial Year," read before a distinguished audience in St. John at a meeting composed of judges, senators and others, the most distinguished citizens of the ancient City of St. John, and which received the highest encomiums from the able speakers at the meeting, and the most favourable comments from the press of the Maritime Provinces and the ancient Province of Quebec. The "Foot Prints," besides other interesting matter, contain the names of the Original Grantees of Parr Town and Carleton in 1783, among whom are many names of United Empire Loyalists, who made Upper Canada their permanent home.—*D. B. Read, in Week.*

GEOGRAPHY.

A NEW OCEAN CABLE.—Arrangements are all complete for laying the cable from Fort Jupiter, Fla., to the island of New Providence. The work will begin at the Jupiter end. The distance between the two points is 230 miles. It is expected that the cable will be in operation by the middle of January.—*The School Journal* (N.Y.).

THE PLACE OF POLITICAL GEOGRAPHY.—By comparing the teaching of geography in the present with that of the past, we find that the natural features of the world are slowly gaining more prominence. Since history

rests upon the geography of a country, since the commercial prosperity of a nation has its foundation in the physical features, there is a growing tendency to magnify physical geography.—*Intelligence.*

DISCOVERIES IN WESTERN AUSTRALIA.—A party have been exploring the country west of the South Australia border. They have found that it consists principally of grass-covered sand hills and sand plains with granite and other hills in groups or isolated peaks. No permanent surface water was discovered. The natives appeared friendly, but fright-

ened. An immense green forest was found extending many miles. Neither grass, quadrupeds, nor birds were found, and the camels had a very bad time of it for want of food. About 10,000 specimens of plants in a good state of preservation were brought to Esperance Bay.—*The School Journal*.

A SEA VOLCANO.—When the American barque *Hesper* was about seventy-five miles off the Japanese coast recently, a rumbling noise was heard and the next instant the ship was thrown on her beam ends. Great waves came tumbling toward the ship, and water rushed on deck from the stern, bow, and over the sides. It is believed that the barque was directly over a sub-marine volcano. Water flooded the deck, and the crew found it was boiling hot. The crew had to climb into the rigging, where they remained five hours, during which great blasts of hot sulphurous gas escaped from the ocean. The scalding water melted the pitch and oakum in the deck seams, necessitating repairs.—*The School Journal* (N.Y.).

AMERICA'S MOST NORTHERN RAILROAD.—The railroad now extending furthest north in North America is the Calgary and Edmonton Railroad, completed in August last, which carries travellers from the Canadian

Pacific Railroad to the north fork of the Saskatchewan, in latitude $53^{\circ} 30'$. This is the top notch of railroading on this continent—800 miles north of New York, and at least 300 miles higher up in the world than the line of railroad which is building across Newfoundland. In Europe there are railroads much further north, and in Sweden there is a little railroad which crosses the Arctic Circle. This new road in Canada will play a large part in the fortunes of that western country, for in many respects the North Saskatchewan Valley is inviting and abounds in resources, and before a great while there will be quite a large population there. The Saskatchewan will be bridged, and the railroad will be extended at least fifty miles beyond Edmonton. The town Edmonton is 2,200 feet above the sea, and though it is so far north, crops are as fine there as in most parts of this continent. With the aid of this railroad it is now possible to travel by steam all the way from the City of Mexico to the shores of the Arctic Ocean, at the mouth of the Mackenzie River, except for short portages to the Athabasca, and around two series of rapids in that and the Mackenzie River. The Hudson Bay Company's steamer runs for many hundreds of miles on the middle and lower Mackenzie River.—*Goldthwaite's Geographical Magazine*.

PUBLIC OPINION.

THE STUPID BOYS.—I once knew a lady tell a schoolmaster, who was proudly boasting of the number of first places which had been obtained by his pupils, that it might be very true what he said, but that these pupils must have been clever boys; her son was stupid, and she would like to know how the stupid boys got on

with him. But such mothers are rare. It is to the parents, then, that we must chiefly call for reform. Let them carefully examine the credentials of every school, and not be taken in by infinite puff. Let them insist on their boys working steadily on, and not being forced to enter into the struggles of life while hardly out of their

childhood. And let, too, every practical worker, who dare, say what he knows. Let him tell of wasted strength, of damaged eyesight, of restless nights suffered by our sons and our daughters, so that every father and every mother may rise up and refuse to allow any more victims to be offered up on the altar dedicated to the demon who bears the name Examination.—A. A. K., in *The Journal of Education* (London).

FAST ATLANTIC SERVICE. — Summerside has spoken and Halifax has spoken concerning a fast Atlantic steamship service for Canada. But Charlottetown remains silent about the matter. Has this city no interests to be promoted by a fast Atlantic service between Halifax and Great Britain? With the McKinley tariff in the States, and discriminatory duties in Newfoundland, surely we ought to be interested in a proposition for improved means of entry to the free ports of the Mother Country. If the Yankees and the Newfoundlanders are such fools as to hamper their commerce and restrict the supply of food for their people by imposing unreasonable duties upon our food products, we may be sure that the Britishers are not. We shall always have a good market in the Mother Country. With better means of reaching this market, we shall be in a better position to profit by it. There can be no doubt that with first-class steamship accommodation between Halifax and Great Britain, and with steamers such as the *Fastnet* and *Premier* as feeders for the new line, our trade with the solid, permanent, profitable market of the Mother Country will largely increase. Charlottetown also should add its voice to the chorus of demand that a fast Canadian Atlantic steamship service shall be established. Will the Board of Trade take the matter up, or shall we have to

resort at once to a public meeting?—*Weekly Examiner and Island Argus.*

SCOTLAND'S INFLUENCE ON CIVILIZATION.—The land of the thistle and the heather has furnished a history which is an example of what a small population and country can do for themselves and the world. Scottish influence has gone as an important factor into the general advancement of human civilization, and the world is better for it to-day. It is instructive to notice the part which the smaller nationalities of the earth have played in the grand drama of civilization. We hear much of the great nations of Europe marshalling their vast armies, and struggling for supremacy of power, and crushing smaller nations under their heel; but there is something sublime in the influence which has gone forth from the smaller countries. They have done much to make the larger nations what they are, and to make the world what it is.

Palestine gave the world a religion—the first, best, and only divine religion. Greece gave it art, literature, philosophy. Switzerland and Holland gave it the earliest practical demonstration of the republican institutions. Scotland—there can be no mistake as to what it has done, both in the development of the individual man and in the development of national character. The sons of Scotland have ever marched with the vanguard in the grand army of human progress. They are a brave and united people, loving liberty as they love life itself. No yoke has ever crushed their spirits. The same glorious race that existed a thousand years ago is still at home upon its soil, only more advanced in all the elements of true national greatness, and all the latter glory outshines the earlier, because of all the fiery trials of the past which has had its influence on civilization.

The close of the thirteenth century

and the beginning of the fourteenth, with all its military glory, was an age of iron and an age of blood. Century after century went on until war had reddened her fields and filled her land with havoc and ruin. No portion of the earth's surface is perhaps more thickly strewn with the ashes of martyred heroes and the bones of slaughtered champions of truth and right. Was all that gallant blood shed

in vain? Assuredly not. The seed was long in sowing, but the harvest has been abundant and glorious. It was the price of independence, of self-government, of civil and religious liberty. When these were won they were not won for Scotland alone, but for posterity, for mankind, and they will for all time to come have their influence on civilization.—*The Methodist Magazine*.

NOTES FOR TEACHERS.

PROBABLY no nobler memorial to the dead was ever erected than the Leland Stanford, Jr., University, which was formally opened at Palo Alto, Cal., October 1, the principal feature of the appropriate ceremonies being an address by Senator Stanford. The total endowment of the University is \$15,000,000, and the various estates belonging to it comprise over 83,310 acres, the largest vineyard in the world being included. President Jordan conducted the examination of applicants for admission, and 473 pupils, of whom 95 are girls, have been accepted. Eleven thousand applications have been made for entrance. Nearly everything is elective, but the student must have instruction of fifteen hours per week for four years under the direction of the professor in charge.—*Public Opinion*.

MARCH 28, 1592. — IN the year 1892 there is one date that should not be lost sight of. It is one of peculiar interest to school teachers. March 28, 1592 (300 years ago next March), there was born in Moravia, a man who spent his life in working to improve the condition of schools, and who did a wonderful work as an educational reformer—more to elevate education than is easily told. This was John Amos Comenius. His

first work was a method of teaching languages in a much shorter time and in a more pleasant manner than the old method. This little book attracted the attention of the educated world, and was translated into fourteen different languages. He wrote a number of works on education, among them the first illustrated school-book ever published. The English parliament invited him to London to confer with him in regard to a universal college which he proposed. Unfortunately the Civil War broke out in England just then, and nothing further was done concerning the college. He was then invited to Sweden to confer concerning education with Oxenstiern. He was called to reform the schools in Hungary, and he was invited also to visit France. His ideas attracted the attention of the leading governments of Europe. Many of the reforms he introduced into schools remain to this day. The probability is that many school teachers in America will call attention to this anniversary. It will be the first attempt to do tardy justice to greatness among teachers.—*The School Journal* (N. Y.).

KNOWLEDGE VS. HEADACHES AND BACKACHES. — At an age of rapid growth a girl's health is sometimes ruined for life by the system of brain-

forcing to which she is subjected. In many cases she has to work eight hours a day, which is the average number of working hours of a grown man. Examinations follow one after another; there is no time to attend to the development of the body—at the most, one hour in the twenty-four is given up to a mild walk; and the continuous sitting in a stuffy room, stooping over books, narrows the chest, and spoils the eyesight; at the age of eighteen a pale, anæmic young lady emerges from the schoolroom, doubtless stocked with knowledge, but also with headaches and back-aches enough to spoil the rest of her life. When one considers the extraordinary rate at which a girl of fourteen will grow, and how much of her forces must be consumed in the mere act of growing, surely it seems more reasonable to lighten her work than to increase it. Such a girl should only be allowed to work in the mornings, when she is freshest, and the rest of the day should be devoted to the open air and development of her body by healthy outdoor games. Above all, even if she has work in the afternoon—and some time must, I suppose, be allowed for preparation—no mental work of any kind should be allowed after 5 p.m. After a long day at school, many a time does the tired child return with a quantity of exercises, etc., to be prepared for the morrow, all of which must be done in the evening, and it stands to reason that it must be highly prejudicial to the brain to be taxed at a time when it is fatigued, and the physical powers of the child are at a low ebb. . . . Truthfulness, courage, and unselfishness are blossoms of character growing but from small seeds; let them be nourished in the warmth and sunshine of love and sympathy, and watchfully protected from choking weeds, and at last will come the crowning of a fine character, without which all the book-

learning in the world is but a parrot's jargon. — *Mrs. Fessie Waller, née Huxley, in the Nineteenth Century for October.*

PROFESSOR SAYCE ON PHARAOH'S LIBRARY.—Portions of a royal library dating from 1430 B.C. have lately been unearthed in Egypt. We now know that Melchizedek was not a myth. Professor Sayce of Oxford, who has discussed these facts in an elaborate essay, very justly observes that they are a serious blow to the pretensions of conjectural higher criticism of the Old Testament literature. We have been told by some of the higher critics that Israel was not a literary nation until after the time of the Judges. No records in the Phœnician dialect have been found running back beyond that time. And, on the basis of the absence of such records, it has been inferred that there were no records. Now, as all the logicians and men of practical sense affirm, merely negative evidence is an unsafe basis for large conclusions. It is ascertained beyond peradventure, by the study of the cuneiform tablets lately uncovered at the city of Tel el-Amarna in Egypt, that a century before the Exodus great libraries existed in the region now called Palestine, and that a brisk correspondence was kept up between the governors of provinces in that part of the Egyptian empire and their superiors in the land of the Nile. We read in a passage in the New Testament, in Hebrews, of Melchizedek, who was "without father, without mother, without descent." We read in a certain chapter in Genesis that Abraham was visited by Melchizedek and received a blessing from him. Now the critics of the school that attacks the Old Testament most severely have been accustomed to say that this legend about a king of Jerusalem in the day of Abraham having

dignity enough to give a blessing to Abraham, on the principle that the inferior is always blessed by the superior, is a myth invented at the instigation of the vanity of Jews of the later ages. It was important that Jerusalem should be made to look dignified at an early day, and so this myth was woven into the literature of the Pentateuch. But here are these cuneiform tablets dug up on the shores of the Nile, with letters from that same Melchizedek, speaking of his city as the town of Salim or Shalem, the god of peace; and sometimes he calls it Uru-salim. And Uru, in the tablets, means city; so that Uru-salim means Jerusalem, and thus positive records go back to the period before the Exodus. Professor Sayce says, with great incisiveness: "The Israelitish conquest of Canaan did not destroy the libraries which existed in certain of the cities which successfully resisted the conqueror;

and where the libraries remained uninjured, readers who could make use of them would have remained too. Samuel and his contemporaries were not compelled to trust to tradition and legend for the earlier history of their country; there were written documents in plenty which they could consult. And a comparison of the fourteenth chapter of Genesis with the contents of the letters of Ebed-tob has shown us that the contemporaries of Samuel actually did consult them; the description of Melchizedek, King of Salem, mythical as it has often been alleged to be, turns out to be in strict accordance with fact. Nothing can prove more clearly that neither the ancient records of Jerusalem nor a knowledge of their contents had perished when the book of Genesis was written; and what was true of Jerusalem must have been true of other cities of Palestine as well."—*Rev. Joseph Cook, in Our Day.*

EDITORIAL NOTES.

WHEN the Duke of Clarence died on the fourteenth of January, 1892, there passed away the Heir Presumptive of a great empire, a loving and beloved member of one of the most charming family circles on earth. As lover and friend his character seems to have been blameless, and he died in the flower of his promise, without a stain on his shield. Worldwide and heart-felt is the sympathy and the regret at his early death.

CHANGE OF VIEW.

FOR many years educators have been working on the truth of the statement, as applied to education, "To build high, build broad;" meaning by this saying, if you wish to have high scholarship you must

educate many. On the continent of Europe, especially in Germany, this doctrine has been accepted as axiomatic. But, as if utterly convinced of the falsity of the assumption, there is now a complete change, both in France and Germany. The current of opinion among the leaders of education now is, that in order to get the highest attainment of scholarship you must have the motive power coming from the highest institutions of learning to the lowest. Provide wisely for the education of the people, but with equal wisdom link together the higher seats of learning, allowing and encouraging the freest and fullest development of thought, carefully providing that every department of human exertion is enthusiastically cultivated. The work accomplished by France in this

direction since the end of the Franco-German War has astonished educators.

To pick out the ablest men and set them to work in special departments of intellectual research is the cry of Continental educators and statesmen at the present time. Britain moves more slowly, and keeps more steadily in the beaten paths of individual effort. She does not take at all kindly to the doctrine, "to pick" off the small berries in order to have a few big ones. Still there is no denying the fact, that power to uplift mankind, to achieve the richest results in intellectual effort must undoubtedly come from the highest institutions of a country. Every man of thought knows what this implies. It implies endowments of the universities by millions of money; it implies the consecration of men of genius to original work for life; it implies, no less, that the searchers shall be free from *duns*. Who will provide the funds for this arduous but magnificent undertaking? Whatever may be done by Continental nations, we feel justified in saying that for Anglo-Saxon peoples the money must be furnished by individual donors, and thus masters will send men of ability and power to colleges and universities as heretofore, while at the same time the family must still be held responsible for the education of the children. The Christian Commonwealth is good and can do many noble things, but there are entities, within the Commonwealth, which, if it touches with its meddling fingers, it touches only to mar.

THE SCHOOL OF PEDAGOGY.

AS stated before in this Magazine, the various classes scattered over the Province for the professional training of teachers of higher grade certificates than second class were gathered into the city last

August, and a School of Pedagogy organized, with Jas. A. McLellan, M.A., LL.D., the well known and appreciated High School inspector and Normal School director, as principal, assisted by Messrs. Spotton, Chase, Shaw, Embree and Carruthers. The examination for certificates took place at the end of the session, immediately before Christmas, and about one half of the candidates were successful in passing the examination. We believe the unanimous opinion of the teachers-in-training was, that for the amount of work required of them a session of nearly double the length of that just ended is necessary.

In the countries where the work has been tried for about one hundred years, the following three things are now unanimously agreed upon, viz.: (1) Theoretical instruction of the candidates in pedagogics; (2) Acquaintance with a Model School organization; and (3) Some well-directed experiments in teaching. For the attainment of the above ends many plans have been proposed and discussed. Opinion seems to be firmly settling in the direction of schools connected with higher institutions of learning in which candidates can obtain this professional training as the best mode of doing this very important and difficult work. The time in the Ontario School of Pedagogy is scarcely four months, in Germany it is at least six times four months. There is no wonder therefore that our candidates complain of want of time for the amount of work required. We shall watch with much interest the further development of this experiment amongst us on giving professional training to the future teachers in our best Public and High Schools. There are several points in connection with the question that we must at present leave untouched.

ASTRONOMICAL NOTES—FEBRUARY—MARCH.

THOMAS LINDSAY, TORONTO.

OBSERVERS of Saturn will have noticed the gradual closing in of the ring, which will continue till about the middle of May when it will begin to again open out. This phenomenon will be readily understood if we regard the ring as a great circle of the star sphere; it crosses the celestial equator, ascending, in right ascension $126^{\circ} 45' 4''$, at an inclination of $6^{\circ} 59' 48''$; the declination of any given point in it is therefore readily computed, and the arc of declination between the planet and the point of the ring (on the star-sphere) which culminates with it, is the angle made with the ring-plane by a line from the earth to Saturn's centre. For example, on February 10th the R. A. of Saturn is $180^{\circ} 17' 15''$, and its declension $2^{\circ} 30' 49''$ N. The declination of the point in the ring having the same R. A. as the planet will be found to be $5^{\circ} 38' 20''$, and the difference $3^{\circ} 7'$ is the "elevation of the earth above the plane of the ring." This is tabulated in the Ephemeris for very few days throughout the year. Saturn rises at 8h. 45m. on February 10th and at 7h. 15m. on March 1st. His nearest neighbour among first magnitude stars is the brilliant Spica in the "Wheat-Ear" of Virgo. Venus passes into north declination on February 15th, and sets on that day at 8h. 45m., nearly due west. About three quarters of the disc is now illuminated, and the planet may be observed in the telescope to much advantage. We have been reminded by Prof. Coakley of the result of the observations of M. Niesten of Brussels, who has determined the time of Venus' rotation to be 23h. 20m.

Mercury is too near the sun for observation this month. Mars is far south in declination, but as he approaches the earth becomes more noticeable. He is now placed between the feet of Ophiuchus the "Serpent Bearer," to the north and east of the Scorpion, rising at 3h. A.M. on the 10th February. Near to his own tiny red disc is the red star of the first magnitude, Antares, the "Scorpion's Heart," and brightest in that constellation. There is a minute companion to this star, difficult with a $3\frac{1}{2}$ inch telescope. One of our correspondents, and a most careful observer, Dr. Donaldson of Fergus, Ont., writing on the subject of double stars, states that he has best success with Antares just at twilight. He mentions as good tests for $2\frac{1}{4}$ inch, to be observed now in the evening sky, the companion to Rigel (Beta Orionis) in the left foot of the giant, and also the star π Monoceros about two-fifths of the distance from Sirius to Alpha Orionis (the right shoulder of the figure) and a little east of the line. Moderate power shows this star an easy double, but $2\frac{1}{2}$ inch at its best should show the star a beautiful triple. Dr. Donaldson considers this a much more difficult object than the fourth star of the "Trapezium." Uranus lies in the moon's path this month and will be occulted on the 18th, the phenomenon, however, not being visible on this side of the globe. The planet may be "picked up" with little difficulty on the morning of the 19th. The moon transits the meridian at 5h. 04m. being then 1° north of Uranus, and about $7\frac{1}{2}^{\circ}$ east. In the same field of the telescope with the

planet (under low power) will be the 4th magnitude star Lambda, in the foot of Virgo. Uranus will be south and east of the star. The great yellow star, Arcturus, transits the meridian about the same time as the planet and λ Virginis, slightly preceding, at an altitude of 66° . He will therefore fairly well mark the position in Right Ascension of the other two. There will be three occultations by the moon favourable for observation this month. On February 12th at 5h. 58m. the star Eta Leonis; on March 4th at 11h. 56m. ν Tauri; and March 9th at oh. 36m. A.M. the star λ Caucri. The planet Neptune on March 8th will be near enough to ϵ Tauri to be seen in the same field with low power; this star comes on top of the figure V in the Bull's head, the bright star Aldebaron forming the other. The planet will be north and

west of the star. Of course large aperture is necessary to observe Neptune with advantage.

BETHLEHEM AND CALVARY.

"With staff and hat the scallop wearing
The far-off East I journeyed through,
And homeward now, a pilgrim bearing
This message, I have come to you:
Go not with hat and staff to wander
Beside God's grave and cradle vnder,
Look inward and behold with awe
His Bethlehem and Golgotha.

"O heart! what profits all thy kneeling
Where once He laid His infant head,
To view with an enraptured feeling
His grave, long emptied of its dead?
To have Him born in thee with power
To die to earth and sin each hour
And live to Him—and this alway,
Is Bethlehem and Calvary."

SCHOOL WORK.

MATHEMATICS.

ARCHIBALD MACMURCHY, M.A., TORONTO.
EDITOR.

ANNUAL EXAMINATIONS, 1891.

JUNIOR LEAVING AND PASS
MATRICULATION.

*Hints and Solutions, By L. B. Davidson,
Toronto.*

ALGEBRA.

Examiners: A. R. Bain, LL.D.; N. F. Dupuis, M.A.; I. E. Martin, B.A.

NOTE.—Candidates for Junior Matriculation will take any eight questions in section A. Candidates for the Junior Leaving examination will take six questions in section A, and any two questions in section B.

A.

1. Collect and reduce to the simplest form:

$$(a) \frac{x+y}{y} - \frac{2x}{x+y} + \frac{x^2 - x^2y}{y^2 - x^2y}$$

$$(b) \frac{a}{(a-b)(a-c)} + \frac{b}{(b-c)(b-a)} + \frac{c}{(c-a)(c-b)}$$

1 (a) Write $\frac{x+y}{y} - \frac{2x}{x+y} - \frac{x^2 - x^2y}{x^2y - y^2}$
etc. Ans. = $\frac{y}{x+y}$.

(b) Write $\frac{a}{(a-b)(a-c)} - \frac{b}{(b-c)(a-b)} + \frac{c}{(a-c)(b-c)}$, etc. Ans. 0.

2. Find the value of x in (a) and the values of x and y in (b).

$$(a) \frac{\sqrt{3x+1} + \sqrt{3x}}{\sqrt{3x+1} - \sqrt{3x}} = 4.$$

(b) $(a-b)(x + (c-d)y) = p+g$, $(a+b)(x + (c+d)y) = p-g$.

2. (a) Add 1 to each side of equation, style this No. 2. Subtract 1 from each side of equation, style this No. 3. Divide No. 2

by No. 3, keeping each side of equation by itself, etc. *Ans.* $x = \frac{2}{3}$.

(b) Either add or subtract the equations,

etc. *Ans.* $x = \frac{cp+dq}{ac-bd}$; $y = \frac{aq+bp}{ac-bd}$.

3. Resolve into factors :

(a) $a^2 + b^2 - c^2 - d^2 - 2ab + 2cd$.

(b) $4x^4 + 6x^3 + 72x - 576$.

(c) $x^3 - 7x^2 - 144$.

3. (a) *Ans.* $= (a-b-c+d)(a-b+c-d)$.

(b) Write $4(x^4 - 144) + 6x(x^2 + 12)$, etc.

Ans. $= 2(x^2 + 12)(2x^2 + 3x - 24)$.

(c) *Ans.* $(x-2)(x+2)(x^2+4)(x^2+9)$.

4. Solve the equations :

(a) $x + \frac{5}{2x} = 3\frac{1}{2}$.

(b) $3x^2 - 2x + \sqrt{3x^2 - 4x - 6} = 18 + 2x$.

4. (a) *Ans.* 2 or $\frac{4}{3}$.

(b) Transpose $2x$ from right to left, then diminish each side by 6; thus $3x^2 - 4x - 6 + \sqrt{3x^2 - 4x - 6} = 12$ (2) place $\sqrt{3x^2 - 4x - 6} = a$, then substitute thus, $a^2 + a = 12$, (3) Solve this quadratic, and substitute value of a in (2). *Ans.* $x = 3$ or $\frac{4}{3}$.

5. Shew that

(a) $\frac{b-c}{1+bc} + \frac{d-a}{1+ad} = 0$, if $\frac{a-b}{1+ab} +$

$\frac{c-d}{1+cd} = 0$. (b) If $x = \frac{b-c}{a}$, $y = \frac{c-a}{b}$,

$z = \frac{a-b}{c}$, then $xyz + x + y + z = 0$.

5. (a) Suppose $\frac{b-c}{1+bc} + \frac{d-a}{1+ad} = 0$, then

$b+abd - c - ucd + d + bcd - a - abc = 0$.

If $\frac{a-b}{1+ab} + \frac{c-d}{1+cd} = 0$, then $a+acd - b - bcd + c + abc - d - abd = 0$. Since this latter is zero we may subtract it from the former without changing the value, and upon doing so we find the former is zero.

(b) In $xyz + x + y + z = 0$, substitute the values given for x, y, z , etc.

6. (a) Solve the equation, $ax^2 + bx + c = 0$, and thence find the conditions for equal roots.

(b) If the roots of $x^2 - px + q = 0$ are a and β , and if $a^2 = q\beta$, find the value of a in terms of β .

6. (a) Book-work.

(b) Since a and B are the roots $\therefore (x-a)(x-B) = 0$, or $x^2 - x(a+B) + aB = 0$. \therefore In the original equation $(a+B) = p$, $aB = q$, and $a^2 = qB$ (hypo). $\therefore a = p - B$,

$a = \frac{q}{B}$. $\therefore \frac{q}{B} = p - B$. $\therefore q = pB - B^2$,

But $q = \frac{a^2}{B}$. $\therefore a^2 = pB^2 - B^3$. $\therefore a =$

$B\sqrt{p-B}$. $\therefore a = B\sqrt{a+B-B} = B\sqrt{a}$
 $\therefore a = B^2$ *Ans.*

7. Solve the following equations :

(a) $x+y = 5$, $x^2+y^2 = 65$.

(b) $2x^2 - xy = 6$, $2y^2 + 3xy = 8$.

7. (a) Cube (1) Find difference between this result and (2) Substitute, etc. $x=4$ or 1.

(b) Multiply (1) by 4, and (2) by 3, subtract results, and factor, thus

$(8x + 3y)(x - 2y) = 0$, etc. $y = \pm 1$, etc.

8. (a) If $3x = 2b + 2c - a$, $3y = 2a - b + 2c$ and $3z = 2a + 2b - c$, shew that $x^2 + y^2 + z^2 = a^2 + b^2 + c^2$ and $xy + xz + yz = ab + ac + bc$.

(b) Prove that $x^3 - px^2 + qx^2 - rx + s$ divided by $x - a$ gives $a^3 - pa^2 + qa^2 - ra + s$ as remainder.

8. (a) Add three quantities, square result, thus we find $x^2 + y^2 + z^2 + 2xy + 2xz + 2yz = a^2 + b^2 + c^2 + 2ab + 2ac + 2bc$. Then multiply first and second, second and third, first and third, collect, etc.

(b) Put $x = a$, substitute, etc.

9. If a ship requires 40 hands, a schooner 15, and a steamer 10; if on a given day 36 vessels arrive in port manned in all by 750 men; and if the hands on the ships were sufficient to supply all the schooners and twice the number of steamers, how many vessels of each kind arrived that day?

9. Let $x =$ number of ships, $y =$ number of steamers, $36 - x - y =$ number of schooners, etc. *Ans.* 11, 13, 12.

10. The difference of two numbers is to the less as 4 is to 3, and their product multiplied by the less is 504; find the numbers.

10. Let $x =$ greater. $y =$ lesser, etc. *Ans.* 14.6.

B.

11. (a) When $x = 2 + \sqrt{-5}$ find the value of $x^3 - 2x^2 + x + 18$.

$$(b) \text{ Given } 1 + \sqrt{1 - \frac{a}{x}} = \sqrt{1 + \frac{x}{a}}$$

to find x .

11. (a) Factor $x^3 - 2x^2 + x + 18$, thus $x(x-1)^2 + 18$. Substitute value of x in this result, etc. *Ans.* = 0.

(b) Square each side, collect, square result thus, $x^3 + a^3 - a^2x^2 - 2ax^3 + 2a^2x = 0$. Add to left side $-a^2x^2 + a^2x^2$. Then factor, thus $(x^3 - a^2 - ax)^2 = 0$. $\therefore x^2 - a^2 - ax = 0$, etc.

$$\text{Ans. } x = \frac{a}{2} (1 \pm \sqrt{5}).$$

12. (a) If the roots of $cx^2 + dx + f = 0$ be a and β , show that the roots of $c^2x^2 + c(d-f)x - df = 0$ are $a + \beta$ and $a\beta$.

$$(b) x^2 + y^2 = 2x^2y^2 - 15, x + y = xy + 1.$$

12. (a) If roots of $cx^2 + dx + f = 0$, be a and B . $\therefore (x-a)(x-B) = 0$. $\therefore x^2 - x(a+B) + aB = 0$. \therefore Since $cx^2 + dx + f = 0$, and $x^2 + \frac{d}{c}x + \frac{f}{c} = 0$, $\frac{d}{c} = -(a+B)$, $\frac{f}{c} = aB$

Substitute these values in $c^2x^2 + c(d-f)x - df = 0$, or $x^2 + x \frac{d-f}{c} - \frac{df}{c^2} = 0$ thus $x^2 - x$

$(a+B+aB) + aB(a+B) = 0$. But the roots of this latter equation are $a+B$ and aB .

$\therefore \{x - (a+B)\} (x - aB) = 0$, or $x^2 - x(a+B+aB) + aB(a+B) = 0$, etc.

(b) Square (2), find difference between result and (1) substitute, etc. $y = 4$ or 1 .

13. Find two numbers whose difference is 4, and twice whose product is equal to the cube of the less.

13. Let x = smaller. $\therefore x+4$ = larger, etc. *Ans.* = 8, 4.

14. A number consists of three digits, the square of the second digit equals the product of the other two. The number multiplied by 7 is 124 times the sum of the digits, and if it be increased by 594 the digits will be inverted. Find the number.

14. Let x = digit in hundred's place.

y = " ten's place.

z = " unit's place.

$$\therefore y^2 = xz \dots (1)$$

$$7(100x + 10y + z) = 124(x + y + z) \dots (2)$$

$$100x + 10y + z + 594 = 100z + 10y + x \dots (3)$$

From number 3 we find $x = z - 6$. Substitute this value of x in (2), etc. *Ans.* = 248.

ARITHMETIC AND MENSURATION.

(Solutions appeared in Jan. number, p. 33.)

NOTE.—Candidates for Junior Matriculation must take section A, and any four questions in section B. Candidates for the Junior Leaving Examination must take questions 4 and 5 in section A, any four questions in section B, and any three questions in section C.

A.

1. (a) How can you determine, by inspection, when a number is divisible by 5, 9?

(b) State and illustrate the proof of multiplication by casting out the nines.

(c) Find the value correct to four decimal

$$\text{places, of: } 2 + \frac{1}{1 \times 2} + \frac{1}{1 \times 2 \times 3} + \frac{1}{1 \times 2 \times 3 \times 4} + \frac{1}{1 \times 2 \times 3 \times 4 \times 5} + \frac{1}{1 \times 2 \times 3 \times 4 \times 5 \times 6}$$

2. Distinguish between prime and composite numbers. Resolve the composite number 277200 into its prime factors, and by this process find the greatest common measure of 1071, 1092, 2310.

3. The actual cost of making a piano is \$256. The manufacturer, importer and local agent each make 25 per cent. profit. For what amount does the agent sell it?

4. One clock strikes 5 strokes in 6 seconds and another strikes 6 strokes in 7 seconds. They strike the 10th stroke of 12 together. If the first clock is correct, what is the error of the second clock when the first clock begins to strike?

5. A speculator is shipping 30 horses, which cost \$160 each, to Liverpool. For how much must he insure them at $1\frac{3}{4}$ per cent. so that in case of loss he may recover the cost of the horses, and the premium paid for insurance?

B.

6. Jones bought a house for \$3,000 cash; it is assessed for $\frac{2}{3}$ its value, the rate of taxa

tion being $16\frac{1}{2}$ mills on the dollar. The insurance is $\frac{1}{3}$ per cent. on $\frac{2}{3}$ of the cost. If Jones could have loaned his money at 5 per cent. what monthly rent is he paying for his house?

7. The expense of constructing a railway is \$5,000,000; of which 40 per cent. is borrowed on a mortgage at 6 per cent., and the remainder is held in shares; what must be the average weekly receipts so as to pay the shareholders 5 per cent., the working expenses being 65 per cent. of the gross receipts?

8. A Montreal merchant owes 5,000 francs in Paris. He buys a draft on London when sterling exchange is at a premium of 9; exchange between Paris and London 25.2 francs per £1. What does the draft cost him?

9. A man borrows \$100 from a money-lender and pays it back in 12 monthly instalments of \$10 each. These partial payments are deposited in the Savings Bank at 4 per cent. per annum, simple interest. What rate of interest per annum is realized?

10. A person buys 6 per cent. bonds; the interest on which is payable yearly and which are to be paid off at par three years after the time of purchase. If he invests his interest when received at 4 per cent. compound interest what should he pay for the Bonds to realize 7 per cent. compound interest on his money?

11. A farm is mortgaged for \$4,500 bearing 7 per cent. interest payable yearly; the mortgage has 3 years to run. What sum paid down now would be equivalent to reducing the interest on the mortgage to 5 per cent., money being worth 4 per cent. per annum, all interest being compound?

C.

12. A certain coin is $\frac{1}{8}$ of an inch thick and $\frac{3}{8}$ of an inch in diameter; another has to be made of $2\frac{1}{2}$ times the value and twice as thick. What will be its size?

13. It is required to cover a piece of ground 80 feet square by a pyramidal tent 30 feet in perpendicular height; find the cost of

the requisite quantity of canvas at 15 cts. per square yard.

14. A ball of lead 4 inches in diameter is covered with silver; find the thickness of the silver in order that (a) the volume of silver may be equal to that of the lead, (b) the surface of silver may be twice that of the lead.

15. A mast is 49 inches in diameter at the bottom and 28 inches at the top, and contains 596.75 cubic feet of wood; find its height ($\pi = \frac{22}{7}$).

16. The sides of a rectangle are 16 and 12; find the distance between the feet of the perpendiculars drawn from opposite vertices to a diagonal.

CLASSICS.

J. FLETCHER, B.A., Toronto, M. A. OXON, Editor.

QUESTIONS ON WORK FOR JUNIOR LEAVING AND PASS MATRICULATION EXAMINATION.

Translate:

Et jam finis erat: . . . Quam das finem, rex mæne, laborum?
—Virgil, *Æneid*, B. I, 223-240.

1. Parse: *jaerentes, constitit, defixit, passis, rependens.*

2. Write notes on *velivolum, sic, nevus Æneas, ob Italiam, revocato a sanguine Teucrici.*

3. Explain the syntax of *vertice, lacrimis, oculos, annis, tenerent.*

4. Translate and explain:

(a) *Manet alta mente repostum Judicium Paridis, spreteæque injuria formæ.*

(b) *Mene incepto desisere victam, Nec posse Italia Teucrorum avertere regem!*

(c) *Vos et Scyllæam rabiem penitusque sonantes*

Acce-tis scopulos; vos et Cyclopia saxa Experti.

Translate:

His ego nec metas . . . nodis fremet horridus ore cruento.

—Virgil, *Æneid*, B. I, 268-296.

1. Parse *dedi, referet, fovebit, placitum, labentibus, nascetur, mitescent, claudentur, vinctus.*

2. Explain the syntax of *metu, lustris, origine, terminet.*

3. Write notes on *domus Assaraci, Phthiam, Mycenae, Cæsar, Quirinus, Belli portae.*

4. *Argis.* State and illustrate the rules for expressing "in a place."

Translate :

Est locus, Hesperiam . . . hospitio

prohibemur arenæ. — Virgil, Æneid, B. 1, 530-540.

1. Parse *coluere, dixisse, assurgens, tulit, dispulit, prohibemur.*

2. State the syntax of *cognominæ, armis, Italiam, superante, hospitio.*

3. *Nimbosus Orion.* What is Orion? Why called *nimbosus*?

4. Scan the first three lines, marking the quantity of each syllable.

CONTEMPORARY LITERATURE.

THE *Living Age* approaches its jubilee and is, and deserves to be, congratulated by all on its high standard and widespread influence. 1892 promises to be a good year.

THE February number of the *Missionary Review of the World* might be called one on China. Promising features in this department of the work are rejoiced over. Prayer is becoming the great missionary question for most of us. An editorial will be found on "The Call to Prayer," by A. T. Pierson.

WE are delighted to welcome the new Canadian magazine just as we are going to press. The cover is attractive and the list of contents promises a rich treat. All Canadians should subscribe for the only purely literary Canadian Monthly. Great success to the *Demimion Illustrated*. Our subscribers can obtain the *Demimion Illustrated* with the MONTHLY at \$2.35.

"A PERFECT GENTLEMAN," a delightful composition by J. H. Dolph, is the frontispiece in the February *St. Nicholas*. Two such serials as "Tom Paulding," by Brander Matthews, and "Two Girls and a Boy," by R. H. Fletcher, ought to please every variety of reader. "The Admiral's Caravan," by Charles E. Carryl, a wonderful fairy tale, and "When I was Your Age," by Laura E. Richards, are both continued.

"PHOTOGRAPHS of the Moon," a contribution from the Lick Observatory, appears in the January *Overland*, and a beautifully illustrated article on "Mission Bells."

A SENSIBLE article on "Spoiling Servants" opens the January *Table Talk*. Mince meat, questions of proper behaviour, dishes new and old, and hints on entertainments are discussed each in its proper place. Wonderful the courage and conquests of the young housekeeper with *Table Talk* for support.

PROF. NORTON'S "Dante" is the leading review in the *Critic* for January 23. The great storm over Miss Seawell and her "Women" article is beginning to subside. What is the agitation over? Neither Miss Seawell nor her opponents can alter or determine the existing state of affairs. In a time of change like our own we can only say, our grand children will see more clearly.

The Letters and Notes are all in their welcome places.

THE opening paper in the January *Century* on the Jews in New York, by Richard Wheatley, gives a detailed account of the different phases of belief and worship practised among them. The names of two Canadian poets, William Wilfred Campbell and Douglas Sladen, are noticed among the

verse. The frontispiece is a portrait of Charles François Gounod, who tells of his experiences in Italy and Germany further on in the magazine. Instalments of the "Naulahka" and "Characteristics," two capital short stories, and Interludes, by Thomas Bailey Aldrich, make up a remarkably strong number.

THE *Cosmopolitan*, a magazine which numbers among its editors the names of Mr. Howells, Mr. Hale, Mr. Halstead, Mr. Matthews and Mr. Walker, cannot but take a leading place in American literature. The announcement concerning Mr. Howells has caused universal comment in all American literary papers. The January number contains among articles especially interesting one on "The Salon," "In Camp With Stanley," "Humpty Dumpty," and "What Say Ye, Women, to This?"

THE first article in the *New England Magazine* for January is on "Phillips Brooks," by Julius H. Ward, and the last is a sermon by Phillips Brooks on Abraham Lincoln, preached while the body of the President was lying in Philadelphia. Two articles on George William Curtis and Samuel Woodworth, and an able paper on St. Louis, by Prof. C. M. Woodward, make this a very substantial number. Anyone who has exceedingly strong nerves may read and admire "The Yellow Wall Paper," but anyone else would need great courage to encounter this powerful morbid tale.

Moffatt's Civil Service Tots. Compiled from Questions set by the Civil Service Commissioners by J. Hall and E. J. Heuchie, Civil Service Tutors. Fourth Edition. 1s. (London: Moffatt and Paige).

Clarendon Press Series:

The Crito of Plato. Part I. Introduction and Text, with Notes. By St. George Stock, M.A., Pembroke College. 2s. (Oxford: At the Clarendon Press.) A fine edition.

The Glory of the Imperfect. An address given at the First Commencement of the

Woman's College of Western Reserve University, Cleveland, Ohio, 1891. By Prof. G. H. Palmer of Harvard. (Boston: D. C. Heath & Co.)

The Gate to Cæsar. By W. C. Collar, A.M. (Boston: Ginn & Co.) The author knows no more disheartening task than to carry a class unprepared in age and knowledge of the language through Cæsar's Gaelic War. He has accordingly written a simplified version of Cæsar, omitting the greater difficulties and yet making comparatively few changes, so that students who have read this book may be able afterwards to use the ordinary text without meeting difficulties beyond their powers.

Ruth the Gleaner and Esther the Queen. By William M. Taylor, D.D., LL.D. (New York: Harper and Brothers.) Dr. Taylor has written another book of Bible Biography, and it is needless to add that, as a study of character and a book for edifying reading it deserves and will certainly be accorded a high place. This is a book that may be read through with pleasure from beginning to end, and aids the reader in attaining to a fuller understanding of Biblical truth and its application to every-day life.

Foot-Prints of Travel. By Martin M. Ballou. (Boston: Ginn & Co.) To go round the world and write a book about it is no new thing now-a-days, but there are few such books more interesting and full of really valuable information than "Foot-prints of Travel." It is a book which will be of great use in preparing work for geography classes. The description of cities may be specially mentioned—it is sometimes hard to find information in a condensed form about the great capitals of the world. There are numerous good illustrations.

A Short History of the English People. By John Richard Green. Illustrated Edition. Part IV. 1s. (London: Macmillan & Co., and New York). Part IV. of this important edition of the "Short History" closes with the death of Henry I. It contains, among many other interesting pictures,

representations of parts of the Bayeux Tapestry, of milking, churning, and weaving, from MS. at Trinity College, Cambridge, dating A. D. 1130-1174, of the Norman Tower and the Abbot's Bridge at S. Edmundsbury, and a map of Early London.

Pitt Press Mathematical Series :

Arithmetic for Schools. By Charles Smith, M.A., Master of Sidney Sussex College, Cambridge. (Cambridge: At the University Press; London: C. J. Clay & Sons; New York: Macmillan & Co.) Numerous mathematical text-books, all of them excellent works, have been written by the present author. His new work on Arithmetic is thorough and comprehensive, containing many good examples, and the explanations are clear and well arranged. There are chapters on Stocks and Bonds and on Exchange which are of more than ordinary value, and there is also a useful collection of miscellaneous examples.

The Waverley Novels : (1) Waverley, (2) Guy Mannering, (3) Antiquary, (4) Rob Roy, (5) Old Mortality, (6) A Legend of Montrose and the Black Dwarf, (7) Heart of Midlothian, (8) Bride of Lammermoor, (9) Ivanhoe, (10) The Monastery, (11) The Abbot, (12) Kenilworth, (13) The Pirate, (14) Fortunes of Nigel, (15) Peveril of the Peak, (16) Quentin Durward, (17) St. Ronan's Well, (18) Redgaunt'et, (19) The Betrothed and Highland Widow, (20) The Talisman, (21) Woodstock, (22) Fair Maid of Perth, (23) Anne of Geierstein, (24) Count Robert of Paris, (25) Surgeon's Daughter. New monthly issue. 2s. per volume. (Edinburgh: A. & C. Black.)

Every school and college library should of course have the Waverley Novels, and there

are few private libraries, even small ones, which do not contain them. The "New Monthly Issue," which is the Centenary Edition, illustrated with 150 steel plates, with additional notes, is the best that we know of for general use, and it gives us pleasure to inform our readers of an edition so satisfactory and indeed excellent in every respect. The paper, printing, and binding (in dark green cloth) are all good and tasteful, and the cost is surprisingly small. What can be said in reviewing the Waverley Novels, except, indeed, to recall the words of Byron, "I have read all Walter Scott's novels at least fifty times"—or of Keble, "His rod, like that of a beneficent enchanter, has touched and guarded hundreds, both men and women"; or of Charlotte Bronte, "All novels after his are worthless."

Reading and Speaking. By Prof. Brainard G. Smith, A.M., of Cornell. 65 cts. (Boston: D. C. Heath & Co.) The present work is designed as a text-book for Colleges and Higher Schools, and also for general use, and is entitled by the author "A Series of Familiar Talks to Young Men Who Would Speak Well in Public." It will be found an eminently practical and sensible hand-book, and if the author does not claim originality, he has succeeded nevertheless in writing a book which will make a place for itself and be remembered as suggestive and helpful by those who read it. The quotations which preface the chapters deserve special mention.

THE edition of "Ovid" reviewed in our columns last month is published only by Messrs. Ginn & Co., Boston.